

Clemson University



3 1604 019 981 879



NATIONAL  
LIBRARY BINDERY  
CO.  
WEST SPRINGFIELD  
EAST CLEVELAND  
INDIANAPOLIS



















C  
OK  
W.

# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

152a

---

Volume 11

March 1, 1931.

Number 1

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING







Digitized by the Internet Archive  
in 2013



<http://archive.org/details/insectpestsurvey11bure>

1529

COLLABORATORS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

ACTING AS REPORTERS FOR THE INSECT PEST SURVEY, 1931.

Alabama	Dr. J. M. Robinson, Alabama Polytechnic Institute, Auburn.
Arizona	Dr. Oscar Bartlett, Box 1857, Commission of Agriculture and Horticulture, Phoenix. Mr. C. D. Lebert, P.O. Box 2006, Phoenix.
Arkansas	Dr. W. J. Baerg, Agricultural Experiment Station, Fayetteville. Mr. Dwight Iseley, Agricultural Experiment Station, Fayetteville.
California	Dr. W. B. Herms, University of California, Berkeley. Prof. E. O. Essig, University of California, Berkeley. Mr. Stewart Lockwood, Bureau of Plant Quarantine and Control, Department of Agriculture, Sacramento. Mr. H. S. Smith, Citrus Experiment Station, Riverside.
Colorado	Dr. C. P. Gillette, State Agricultural College, Fort Collins.
Connecticut	Dr. W. E. Britton, Agricultural Experiment Station, New Haven. Dr. E. P. Felt, Bartlett Research Laboratory, Stamford.
Delaware	Mr. A. Stearns, Agricultural Experiment Station, University of Delaware, Newark.
Florida	Dr. Wilmon Newell, State Plant Board, Gainesville. Dr. E. W. Berger, State Plant Board, Gainesville. Mr. J. R. Watson, State Plant Board, Gainesville. Dr. H. T. Fernald, 707 East Concord Ave., Orlando. <del>Ma</del>
Georgia	Mr. M. S. Yeomans, State Board of Entomology, Atlanta. Mr. C. H. Alden, Cornelia. Mr. J. B. Gill, Box 444, Albany.
Idaho	Mr. Claude Wakeland, Agricultural Experiment Station, Moscow.
Illinois	Mr. W. P. Flint, State Natural History Survey, Urbana. Dr. T. H. Frison, State Natural History Survey, Urbana.



Indiana	Prof. J. J. Davis, Purdue University, Lafayette.
Iowa	Dr. Carl J. Drake, Iowa State College, Ames. Mr. H. E. Jaques, Iowa Wesleyan College, Mt. Pleasant.
Kansas	Prof. Geo. A. Dean, Agricultural Experiment Station, Manhattan. Dr. H. B. Hungerford, University of Kansas, Lawrence. Prof. Harry R. Bryson, Agricultural College, Manhattan. Dr. R. C. Smith, Agricultural College, Manhattan.
Kentucky	Prof. W. A. Price, University of Kentucky, Lexington.
Louisiana	Dr. W. E. Hinds, Louisiana State University, Baton Rouge.
Maine	Dr. H. B. Peirson, State of Maine Forest Service, Augusta. Mr. C. R. Phipps, Agricultural Experiment Station, Orono.
Maryland	Dr. E. N. Cory, Maryland University, College Park.
Massachusetts	Mr. A. I. Bourne, Agricultural Experiment Station, Amherst.
Michigan	Prof. R. H. Pettit, Agricultural Experiment Station, East Lansing.
Minnesota	Prof. A. G. Ruggles, University of Minnesota, University Farm, St. Paul. Prof. A. A. Granovsky, University of Minnesota, University Farm, St. Paul.
Mississippi	Prof. R. W. Harned, State Plant Board, Agricultural College.
Missouri	Dr. Leonard Haseman, Agricultural Experiment Station, Columbia. Mr. K. C. Sullivan, Board of Agriculture, Jefferson City. Mr. R. M. Jones, State Fruit Experiment Station, Marionville.
Montana	Dr. A. L. Strand, Agricultural Experiment Station, University of Montana, Bozeman.
Nebraska	Prof. M. H. Swenk, University of Nebraska, Lincoln. Mr. Don B. Whelan, University of Nebraska, Lincoln. Mr. L. M. Gates, Department of Agriculture, Lincoln.
Nevada	Mr. G. G. Schweis, University of Nevada, Reno.
New Hampshire	Prof. W. C. O'Kane, Agricultural Experiment Station, Durham. Mr. P. R. Lowry, Agricultural Experiment Station, Durham.

New Jersey      Dr. T. J. Headlee, Agricultural Experiment Station, New Brunswick.  
Mr. Harry B. Weiss, Bureau of Statistics and Inspection, Department of Agriculture, Trenton.

New Mexico      Dr. J. R. Eyer, College of Agriculture, State College.

New York      Prof. C. R. Crosby, Cornell University, Ithaca.  
Dr. R. D. Glasgow, New York State Museum, Albany.  
Mr. P. J. Parrott, Agricultural Experiment Station, Geneva.  
Mr. P. J. Chapman, New York State Experiment Station, Geneva.

North Carolina      Dr. Z. P. Metcalf, North Carolina State College, State College Station, Raleigh.  
Dr. R. W. Leiby, Commission of Agriculture, Raleigh.

North Dakota      Prof. J. A. Munro, North Dakota Agricultural College, State College Station, Fargo.

Ohio      Dr. J. S. Houser, Agricultural Experiment Station, Wooster.  
Dr. Herbert Osborn, Ohio State University, Columbus.  
Dr. R. C. Osburn, Ohio State University, Columbus.  
Mr. T. H. Parks, Ohio State University, Columbus.  
Mr. E. W. Mendenhall, Ohio State Department of Agriculture, 97 Brighton Road, Columbus.

Oklahoma      Prof. C. E. Sanborn, Agricultural Experiment Station, Stillwater.  
Mr. C. F. Stiles, Oklahoma Agricultural and Mechanical College, Stillwater.

Oregon      Dr. Don C. Mote, Oregon Agricultural College, Corvallis.

Pennsylvania      Dr. T. L. Guyton, Bureau of Plant Industry, Harrisburg.  
Prof. H. E. Hodgkiss, Pennsylvania State College, State College.  
Mr. A. B. Champlain, Bureau of Plant Industry, Harrisburg.  
Mr. H. B. Kirk, Bureau of Plant Industry, Harrisburg.  
Mr. J. N. Knull, Bureau of Plant Industry, Harrisburg.  
Mr. G. F. MacLeod, Pennsylvania State College, State College.  
Mr. J. R. Stear, c/o Koppers Experiment Farm, Ligonier.  
Mr. C. A. Thomas, Pennsylvania State College, Kennett Square.  
Mr. H. N. Worthley, Pennsylvania State College, State College.  
Mr. W. B. Mabey, Pennsylvania State College, State College.

Rhode Island      Dr. A. E. Stene, State Department of Agriculture, Kingston.



South Carolina Prof. Franklin Sherman, Clemson College.

South Dakota Prof. H. C. Severin, Agricultural Experiment Station,  
Brookings.

Tennessee Prof. G. M. Bentley, State Board of Agriculture,  
Knoxville.

Texas Dr. F. L. Thomas, Agricultural Experiment Station,  
College Station.

Utah Prof. G. F. Knowlton, Utah Agricultural Experiment  
Station, Logan.

Vermont Mr. Harold L. Bailey, State Department of Agriculture,  
Montpelier.

Virginia Prof. W. J. Schoene, Crop Pest Commission, Blacksburg.  
Mr. C. R. Willey, Division of Plant Industry, 1112 State  
Office Building, Richmond.

Washington Prof. R. L. Webster, State College of Washington,  
Pullman.  
Mr. W. W. Baker, Western Washington Experiment Station,  
Puyallup.

West Virginia Prof. W. E. Rumsey, Agricultural Experiment Station,  
Morgantown.  
Dr. L. M. Pairs, Agricultural Experiment Station,  
Morgantown.

Wisconsin Mr. E. L. Chambers, State Department of Agriculture,  
Madison.  
Prof. H. F. Wilson, University of Wisconsin, Madison.

Wyoming Mr. A. G. Stephens, Department of Agriculture, Cheyenne.

Haiti Dr. H. L. Dozier, Head, Department of Entomology,  
Service Technique, Department of Agriculture,  
Port-au-Prince.

Hawaii Mr. O. H. Swezey, Hawaiian Sugar Planters' Association,  
Honolulu.

Mexico Dr. A. W. Morrill, Cajeme, Sonora.  
California address: 815 Hill Street, Los Angeles.

Porto Rico Mr. M. D. Leonard, Insular Experiment Station,  
Rio Piedras, Porto Rico.

# INSECT PEST SURVEY BULLETIN

Vol. 11

March 1, 1931

No. 1

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JANUARY AND FEBRUARY, 1931.

In introducing Volume 11 of the Insect Pest Survey Bulletin, we wish to express the gratitude which the Survey feels for the many commendations received from its readers on the last Summary Number. The quality of this number, and, in fact, of the entire Survey Bulletin, is to a very large extent attributable to the increasing cooperation which we are receiving from our collaborators. Probably the most influential factor in this increased efficiency is the appreciation by the entomologists of the States of the value of State Surveys. Each year additional States include this phase of work as a major project, and with each State Survey set up, the Federal Insect Pest Survey's picture of the entomological conditions in that State advances materially.

The Survey wishes also at this time to remind its collaborators that it is now in position to assist them materially in working up geographical distribution and lists of host plants and of parasites of individual pests. It can not, however, undertake the preparation of comprehensive lists of insects, although its files are always open to research workers who find it possible to visit Washington. About 20 requests for informational service were filed during the past year.

Quite naturally, when such a large mass of information from so many and varied sources is received, mistakes in determination and interpretation will occur. The Survey invites its readers to criticise any feature of the material that it publishes and urges them to send in corrections promptly in order that mistakes may not remain in the permanent records of the Survey but may be corrected in subsequent numbers of the Bulletin.

The very remarkable drought that prevailed over a large part of the country last year will undoubtedly have a marked effect on the abundance of many insects. The very mild winter that has prevailed over an equally large region will also probably be reflected in insect abundance. Our collaborators should strain every effort this year to



give the Survey as complete a picture as possible of the relative abundance of the various insects of their respective territories.

During the very warm weather of late January and early February, reports were received from Missouri and South Dakota of emergence of grasshoppers. It was at first believed that this was precocious hatching, but later evidence seems to indicate that it was merely the emergence from hibernation of such species of grasshoppers as spend the winter in the early nymphal stages.

This same warm weather resulted in reports of the appearance of cutworms in Missouri, and we also have a report of damage to strawberry buds by cutworms late in February on Bainbridge Island in Washington State.

An interesting observation of the successful hibernation of the pupae of the corn ear worm at Columbia, Mo., has been received. These pupae were alive when the report was made, in the last week of February.

The sugarcane borer appears to have passed the winter in very good condition in Louisiana, though the population that entered hibernation is reported as having been small.

Eggs of the rosy apple aphid seem to be prevalent enough in Pennsylvania to indicate trouble, while in southern Virginia they are so scarce that the entomologists are recommending omitting the aphid treatment in early sprays.

The San Jose scale still seems to be on the increase along the Atlantic seaboard from Pennsylvania to Georgia and westward over the Gulf region.

Reports of very successful hibernation of the codling moth have been received from the New England, Middle Atlantic, South Atlantic, and the southern part of the East Central States.

The vegetable weevil has been reported from practically the entire infested territory as affecting winter truck crops.

The spotted cucumber beetle is reported as doing more or less damage in the Gulf region. This condition, however, is not unusual.

The banded cucumber beetle is reported as quite generally distributed over Florida. Although known for several years from the western part of the State, it is a new pest on the peninsula.

The western spotted cucumber beetle started leaving winter quarters during late January in Oregon.

The asparagus miner is reported for the first time from central California. It has been known for some time as a pest in the San Joaquin and Sacramento Valleys.

A heavy migration of the turnip aphid was observed in Galveston County, Texas, on February 2.

During the last week in January and the first week in February, the European earwig was observed active at several points in Oregon.





Texas F. L. Thomas (February 27): As yet we have received no complaints of cutworms.

Arizona C. D. Lebert (February 25): Agrotis ypsilon Rott. is moderately abundant in Salt River Valley.

Washington Wm. W. Baker (February 26): Japanese strawberry growers on Bainbridge Island report two kinds of cutworms as working on the buds of strawberries at this time and state that they have never observed them working this early during previous seasons. Two of the growers have promised to send in material for determination.

#### WIREWORMS (Elaterridae)

Kansas H. R. Bryson (February 20): Wireworms became active near the surface at Manhattan unusually early this year.

#### WHITE GRUBS (Phyllophaga spp.)

Kansas H. R. Bryson (February 20): Owing to the recent high temperatures, white grubs are very close to the surface at Manhattan.

### CEREAL AND FORAGE - CROP INSECTS

#### Wheat

#### HESSIAN FLY (Phytophaga destructor Say)

Missouri L. Haseman (February 23): The Hessian fly infestation is more or less scattered similar to last year, but thus far this pest has survived the winter in fine shape. Some samples taken earlier in the winter showed a very high percentage of parasitism, while others near Columbia show little or none.

#### CORN

#### CHINCH BUG (Blissus leuconterus Say)

Missouri L. Haseman (February 23): The weather up until the last few weeks has been ideal for chinch bugs, as we had little moisture prior to February. The present cool rains are not so favorable for the bugs, however.

Kansas H. R. Bryson (February 20): There are very few chinch bugs to go into hibernation at Manhattan this winter. Large numbers went into winter quarters in southern Kansas, but effective burning in a number of counties may reduce the population considerably.



CORN EAR WORM (Heliothis obsoleta Fab.)

Missouri

L. Haseman (February 23): A plant in my garden set aside for corn ear worm studies shows that the pupae have survived the winter, so, <sup>far</sup> almost perfectly. Of 8 pupae dug up on February 8, 7 were perfect, one apparently having been killed by a fungus. Furthermore, these were only on the average about 4 inches below the surface of the ground, each with its characteristic exit hole, which I noted in this case ran almost vertical, rather than sloping as it is usually described.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Florida

J. R. Watson (February 24): The spotted cucumber beetle is less abundant than usual.

Alabama

J. M. Robinson (February 27): The spotted cucumber beetle is moderately abundant on lettuce, turnips and legumes, at Auburn and Fairhope.

Louisiana

W. E. Hinds (February 25): Diabrotica duodecimpunctata are flying actively and appear to be present in at least average numbers.

Mississippi

K. L. Cockerhan (February 1): On February 1, when spraying Sitsuma orange trees at Biloxi, these beetles were observed to fly out of the trees in great numbers as the spray mist struck the foliage. The beetles were evidently feeding to some extent on the more or less tender leaves. These beetles have been very plentiful in this section all winter, being noted on various winter truck crops. They have appeared more numerous than usual.

H. Dietrich (February 25): The spotted cucumber beetle has been moderately abundant on turnips at Lucedale all winter.

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (February 25): The hibernation of the sugarcane borer appears to have been quite successful for the comparatively small borer population entering hibernation. General observations indicate approximately 50 per cent of the hibernating borer larvae alive up to this time. With a very mild winter and an early spring it will likely give opportunity for an extra generation of borers to develop during the following season.

SUGARCANE BEETLE (Euthoeola rugiceps Lec.)

Louisiana

W. E. Hinds (February 25): Euthoeola rugiceps is present

in some cane fields as adults, as shown during the recent observations following plowing.

## FRUIT INSECTS

### APPLE

#### APHIDS (Aphididae)

##### Pennsylvania

H. E. Hodgkiss (February 24): Eggs of the rosy apple aphid (Anuraphis roseus Baker) appear to be well distributed on the blossom spurs over the trees and very many on water sprouts. This condition is similar to that which occurred in the fall of 1929 and which indicated the rosy aphid outbreak of 1930. I am looking for an unusual abundance of this aphid this spring on account of these conditions.

##### Virginia

M. P. Jones (March 2): While on a trip to Blacksburg, February 29, we examined an orchard near the station. We found that aphid eggs were so scarce that nicotine will be omitted from the spray this spring. There was no sign of the eggs hatching.

#### SCALES (Coccidae)

##### South Dakota

H. C. Severin (February 19): The scale insects have passed the winter very successfully.

##### Mississippi

R. B. Deen (February 25): Scale insects on peach and apple trees have been observed in very large numbers at Tupelo. Apparently a very large number passed the mild winter and an enormous number of trees will be injured and killed where proper spraying is not practiced.

##### Washington

Wm. W. Baker (January and February): The young of Lecanium sp. are very numerous on fruit trees and many native shrubs around Puyallup, Sumner, Tacoma, Fairfax, and Eatonville, while at Bellevue, where they were very abundant last year scales are rather scarce. None were found while a number of trees and native shrubs on Bainbridge Island were being examined.

#### SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

##### Pennsylvania

H. E. Hodgkiss (February 24): The San Jose scale is even more abundant than was anticipated and in the Cumberland Valley region some orchards are in as bad condition as orchards were in the first years of the San Jose scale outbreak.



- Georgia C. H. Alden (February 19): The San Jose scale is scarce at Cornelia. Moderately abundant at Thomaston, where crawlers were found in orchards.
- Oliver I. Snapp (January 20): The percentage of live San Jose scales at Fort Valley on peach trees is somewhat higher this winter than usual. This may be due to absence of low temperatures so far this winter. The average percentage of live scale on peach trees on January 6, 1931, was found to be 91.6. The average percentage on January 15, 1930, was 84.9. On December 1, 1928 it was 63. On December 6, 1927, it was 79.3. And on January 18, 1927, was 75.
- Florida J. R. Watson (February 24): The San Jose scale is moderately abundant.
- Mississippi H. Dietrich (February 25): The San Jose scale is plentiful on peach, pear, and rose in George, Greene, and Perry Counties. It has also been found killing ornamental laurel at Lucedale.
- J. F. Kislanko (February 26): The San Jose scale is killing some of the fruit trees in the vicinity of Wiggins.
- R. Z. Pepper (February 26): There is quite an abundance of San Jose scale showing up in the peach orchards near Yazoo City.
- California S. Lockwood (February 26): Investigations made during the month have shown that San Jose scale will in all probabilities cause some trouble to peaches in the upper San Joaquin Valley this year. They seem to be fairly abundant. In a few orchards incrustations of some twigs has occurred, though only in a few.
- CODLING MOTH (Carpocapsa pomonella L.)
- New Hampshire P. R. Lowry (February): Hibernating larvae appear in about usual numbers in southeastern New Hampshire.
- Pennsylvania H. E. Hodgkiss (February 24): The mortality of codling-moth larvae is difficult to estimate, but there is no reason to expect that the percentage of infestation will be small as the number of larvae going into winter was unusually large.
- Georgia C. H. Alden (February 19): Large numbers of hibernating larvae were found in orchards at Cornelia.
- Missouri L. Hasemen (February 23): We are carrying through an unusually large population of the codling moth, particularly

in the orchards where control was not satisfactory last summer. Winter mortality is very low, as would be expected.

Oregon

D. C. Mote (February 24): No codling moths have pupated as yet in the region of Corvallis.

TENT CATERPILLARS (Malacosoma spp.)

Washington

W. W. Balser (January and February): The egg masses of two caterpillars, Malacosoma disstria Hbn. and M. pluvialis Dyar, are very scarce on fruit trees and other deciduous trees this season. While making observations at Puget, Puyallup, Sumner, and Bellevue, and on Bainbridge Island not a single egg mass was found where during the past three seasons they were abundant, except that during the winter of 1929-30 the eggs of pluvialis were rather scarce.

SPRING CANKER WORM (Paleacrita vernata Peck)

Kansas

H. R. Bryson (February 20): Emergence of the spring canker worm began on February 17 and has not reached its peak at this writing.

FALL CANKER WORM (Alsophila pometaria Harr.)

Kansas

H. R. Bryson (February 20): Fall canker worms began emerging at Manhattan January 15 and have continued until the present time. The peak of the emergence was reached on January 29, the period of greatest emergence being between January 23 and February 7.

California

S. Lockwood (February 26): During the month, it was found that the fall canker worm eggs were more than normally abundant in cherries in Placer County.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

New Hampshire

F. R. Lowry (February): European red mite eggs are very common in many orchards in southern New Hampshire.

Pennsylvania

H. E. Hodgkiss (February 24): A survey of the eastern Pennsylvania counties indicates that the infestation of the European red spider is rather spotty, although it is sufficient to warrant special attention except in two counties, Delaware and Chester, where oil spray will not be recommended on account of the unusually low percentage of eggs.



CLOVER MITE (Aceria praticola Koch)

California S. Lockwood (February 26): The eggs of the brown mite have been less than normal in Flacer County.

PEACH

PEACH BORER (Aegeria exitiosa Say)

Georgia C. H. Alden (February 19): Peach borers are scarce at Cornelia and moderately abundant at Thomaston.

Florida J. R. Watson (February 24): The peach borer is about as abundant as usual.

Mississippi H. Dietrich (February 25): The peach borer is moderately abundant in George County.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Georgia C. H. Alden (February 19): Larvae are hibernating at Cornelia.

PLUM CURCULIO (Conotrachelus nenuphar Host.)

Georgia Oliver I. Snapp (February 20): The weather at Fort Valley has not yet been sufficiently cold to bring about the mortality of many adult curculios in hibernation. The minimum temperature to date is 19.8° F., which, according to hibernation records, is not low enough to kill many curculios.

C. H. Alden (February 19): The plum curculio is still in hibernation at Cornelia and Thomaston.

Florida J. R. Watson (February 24): The plum curculio is still in hibernation.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comae Say)

California E. W. McGregor (February 13): A serious problem concerns two or three species of leafhoppers, particularly the grape leafhopper, which seriously injures grape crops during the active season, and which has somewhat recently developed the habit of migrating into citrus groves at the approach of cool weather in the fall. During 1930 these leafhoppers reached, possibly, the highest point of abundance ever recorded, and over a considerable area were reported as causing great damage to vineyards. Similarly, they were more abundant in orange groves than previously. I believe

that I have connected them with a peculiar bluish on the rind of ripening oranges that has been arousing more and more complaint and speculation. Certain crops suffered considerable reduction in grade from this cause during 1930. The injury evidently is becoming increasingly greater.

E. O. Essig (February 24): Hibernating adults are more numerous than ever before noted.

California

S. Lockwood (February 26): The grape leaf hopper, has evidently wintered very well. The overwintering adults during the warm days are very readily found in the grasses in the vineyards and adjacent roadsides and ditch banks. Unless these are checked, commercial damage will occur over a large part of the San Joaquin Valley.

PACIFIC RED SPIDER (*Tetranychus pacificus* McG.)

California

E. A. McGregor

(February 13): For several years this mite has been becoming increasingly common and disastrous -- chiefly as a pest of vineyards. It is also a serious menace to various deciduous fruit trees and ornamentals. It is my opinion that if its aggregate damage were computed, it would be shown to be the most costly pest operating in the northern three-quarters of California. To say that it is a major pest is no exaggeration.

E. O. Essig (February 24): There are many hibernating mites under the bark of grapevines in the San Joaquin Valley.

BLACKBERRY AND DEWBERRY

RED-NECKED CANE BORER (*Agilus ruficollis* Fab.)

Mississippi

R. W. Harned (February 23): Dewberry plants that had evidently been injured by the larvae of Agilus ruficollis were received from Winona on February 16. One larva tentatively identified by J. M. Langston as this species was found.

AN APHID (*Amphorophora rubi* Kalt.)

Washington

W. W. Baker (February 12): Eggs and very recently hatched young were found on and close to the buds of evergreen blackberries, especially those near the tip. From one to five or six were usually present in each case and the majority of eggs were more or less concealed in the crevices at the sides of the buds. As the eggs and young appear identical with those found on thimble berry this is possibly Amphorophora rubi (Kalt.). In the case of the thimble berry there were



often ten or twelve eggs at each bud. The writer has often looked for aphids on Evergreen blackberries at Bellevue and Puyallup during the past four years without ever locating any, but as all these observations were made later in the season that fact may account for the failure to find them during those observations.

## PECAN

### TWIG GIRDLER (Oncideres cingulatus Say)

Mississippi H. Dietrich (February 25): The hickory girdler (Oncideres cingulatus) was very abundant and injurious to pecans in George County during October and November (probably owing to dry summer many adults emerged).

### HICKORY SHUCK WORM (Iaspexresia carvana Fitch)

Mississippi R. W. Harned (February 23): J. M. Langston reports that overwintering shuck worms are less numerous this year than they have been during several previous years.

### GLOOMY SCALE (Chrysomphalus tenebriosus Comst.)

Alabama J. M. Robinson (February 27): The gloomy scale is moderately abundant on pecans at Fairhope.

## CITRUS

### GREEN CITRUS APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (February 24): The green citrus aphid is very scarce, although one occasionally meets a tree with a heavy infestation. This is undoubtedly due to the cold weather causing the citrus trees to be thoroughly dormant without new growth to support aphids. With the possible exception of tangerines, which are always late in putting out their growth, it does not seem at all probable that the aphid will do much damage this spring.

H. T. Fernald (February 24): Aphis spiraeicola probably just appearing on opening citrus leaf buds at Orlando. It is too soon to judge abundance.

### MELON APHID (Aphis gossypii Glov.)

California Monthly News Letter, Los Angeles County (February 15): Aphis infestations in the citrus groves of the county have appeared earlier than usual in most localities this season.

Such infestations were present in some areas before the trees started to produce buds. Infestations are becoming heavy at this time in some localities. In many instances the new growth and buds have advanced so materially that it is advisable to control the aphids at this time.

FLORIDA FLOWER THRIPS (Frankliniella tritici bispinosus Morg.)

Florida J. R. Watson (February 24): The Florida thrips are very scarce. This is undoubtedly due to the cold weather causing the citrus trees to be thoroughly dormant without making new growth.

SCALE INSECTS (Coccidae)

Alabama J. M. Robinson (February 27): Citrus scales are moderately abundant at Spring Hill.

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

Florida J. R. Watson (February 24): The Florida red scale is more abundant than it was a year ago.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Arizona C. D. Lebert (February 25): A severe infestation on citrus in Mesa was observed January 14-25. The scales were mature or nearly so.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida J. R. Watson (February 24): The purple scale is moderately abundant.

H. T. Fernald (February 24): The purple scale is moderately abundant at Orlando; more abundant than last year.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Arizona C. D. Lebert (February 25): Several mature females of the cottony-cushion scale were found in old infested areas in the Salt River Valley during January and February.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Florida J. R. Watson (February 24): The citrus whitefly is moderately abundant; more so than for several years.

Mississippi H. Dietrich (February 25): The citrus whitefly is moderately abundant on Satsuma orange at Lucedale; very abundant on cape jasmine in George, Greene, and Perry Counties.

TRUCK - C R O P I N S E C T S

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Alabama J. M. Robinson (February 27): Weevil larvae are moderately abundant, feeding on lettuce, turnip tops, and turnip bulb. Larvae and pupae present at Andalusia, Auburn, and Grove Hill. (We can not definitely identify until adults emerge.)

Mississippi E. L. Cockerham (February 4): Larvae of this insect were found damaging cabbage and turnip in a garden in Biloxi to such an extent that spraying was resorted to for control.

R. W. Harned (February 23): The first specimens of the vegetable weevil to be received at this office during 1931 came from Vicksburg on January 26. The correspondent sent in several larvae with the report that they had practically destroyed a 2-acre field of turnips. Severe injury by the larvae to cabbage plants in the hot bed was reported from Mendenhall on February 13, and to turnip greens from Neshoba on February 18. A correspondent at Fayette reported on February 20 that vegetable weevil larvae were causing serious damage to almost all garden vegetables. One adult and several larvae were collected on turnips at Meridian on February 17.

G. L. Bond (February 25): The vegetable weevil was found to be quite numerous on turnips in a field near Maselle.

Henry Dietrich (February 25): Larvae were found sparingly this year all over George County but nowhere doing any damage.

J. P. Kislanko (February 26): The vegetable weevil is very abundant this winter in Stone County and the southern part of Forrest County, causing very severe damage to turnip, cabbage, carrot, and other vegetables.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Florida J. R. Watson (February 24): We have been receiving a good many specimens of Diabrotica balteata. This seems to be a new arrival in Florida, particularly in the peninsular part of the State, as it is not listed from Florida in any of the older lists. The State Plant Board listed it from western Florida as long ago as eight years, but it now seems to be all over the State; although abundant, it is not injurious as yet.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon T. R. Chamberlin (January 29): Diabrotica soror has been leaving the winter "caches" for the last two or three days



and many are on the wing. They are leaving the cecidies about one month earlier than in 1930, probably owing to the absence of snow upon the ground and some unusually warm days toward the end of January in Forest Grove. (February 27): In spite of the fact that Diabrotica sericea left the cecidies in the vicinity of Forest Grove about 1 month earlier than last year, they have not been found abundantly in the fields since issuance and egg development in the ovaries is little if any in advance of what it was at this time last year.

Don C. Mote (February 24): Observed one adult feeding on the leaves of seedling marigolds at Corvallis on February 23.

SEED CORN MAGGOT (Exleyia cilicrura Rond.)

Mississippi

R. W. Harned (February 23): Injury to English pea plants by Phorbia fusciceps was reported from Excatawpa on January 21.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perry)

Alabama

J. M. Robinson (February 27): Mole crickets are moderately abundant at Auburn.

PILLBUGS (Oniscidae)

Mississippi

R. W. Harned (February 23): A correspondent at Sherard reported that pillbugs were very abundant in his garden on February 9.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Florida

J. R. Watson (February 24): The Colorado potato beetle is still in hibernation.

Alabama

J. M. Robinson (February 27): Damage by the Colorado potato beetle is anticipated at Pell City.

Mississippi

H. Dietrich (February 25): The first adult was observed at Lucedale on February 19, attacking tomato plants in a seed bed.

Texas

F. L. Thomas (February 27): Colorado potato beetle - not yet observed.

SPINACH

A MAGGOT (Hylemyia sp.)

Mississippi G. L. Bond (February 25): Dipterous larvae were attacking young roots of young spinach in field near Laurel; about one-half to three-fourth of the spinach died, and upon examination the root stems were found to be hollow. The small larvae were found in the ground beside the spinach and from all indications were responsible for the damage.

CABBAGE

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia Floyd F. Smith (February 11): It is estimated that 2 per cent of the population present at Arlington Farm, Rosslyn, in November, 1930, is still alive on rape plants. It is evidently that this aphid will spend the entire winter here as an agamic female. A Japanese variety of rape seems to be more severely attacked than any of the other varieties growing near by.

Mississippi R. W. Harned (February 23): Aphids identified by A. L. Hemner as Brevicoryne brassicae were abundant on cabbage plants collected at Okolona on February 6.

Henry Dietrich (February 25): Brevicoryne brassicae was very abundant on collards at Leakesville.

GREEN PEACH APHID (Myzus persicae Sulz.)

Mississippi R. W. Harned (February 23): A slight infestation of Myzus persicae on cabbage was reported from Okolona on February 6.

Henry Dietrich (February 25): This aphid was extremely abundant on turnips at Lucedale in November and December, 1930.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Florida J. R. Watson (February 24): The harlequin bug has not yet appeared in the fields.

Mississippi Henry Dietrich (February 25): The harlequin bug was very bad in George, Greene, and Perry Counties on collards last November and December.

Texas F. L. Thomas (February 27): The harlequin bug has not come to our attention yet.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Mississippi

R. W. Wurned (February 23): Plutella maculipennis was collected on a cabbage plant at Okolona on February 6.

Henry Dietrich (February 25): Larvae were found in large numbers on cabbage, both plants in beds and set out at Lucedale; adults and pupae also present in February.

Arizona

C. D. Lebert (February 25): Diamond-back moths are abundant on cabbage in the Salt River valley. Larvae were mining the leaves on January 25.

IMPORTED CABBAGE WORM (Pieris rapae L.)

North Carolina

R. W. Leiby (February 19): An adult was observed on the wing February 19 at Raleigh. This is not unusual, for we have records of the occurrence of this adult for every month in the year at Raleigh.

Missouri

L. Haseman (February 26): During the noon hour today I saw my first cabbage butterfly on the wing at Columbia.

CABBAGE MAGGOT (Hydomyia brassicae Bouche)

Alabama

J. M. Robinson (February 27): The cabbage maggot is moderately abundant at Auburn; 25 per cent of the lettuce in one garden has been destroyed.

STRAWBERRY

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

Alabama

J. M. Robinson (February 27): The strawberry root louse is moderately abundant, killing plants in beds at Geneva.

ASPARAGUS

ASPARAGUS MINER (Acromyza simplex Loew)

California

H. J. Ryan (January 15): The asparagus miner has recently been added to the short list of insects attacking asparagus in southern California, through the finding of an infestation in a field at Norwalk. A check of fields in adjacent areas shows it to be of more or less general occurrence in that part of Los Angeles County, and reports have since been received indicating that it also occurs in the San Fernando Valley. This pest seems to be well distributed over the world and has previously been recorded as being very abundant in the Sacramento and San Joaquin delta regions of California, but apparently has not previously been recorded from the southern part of the State.



PEAS

PEA APHID (Illinoia pisi Kalt.)

Arizona      C. D. Lehart (February 25): The Salt River Lettuce Growers Association reported severe infestations of pea aphids on peas near Mesa and Tempe in February and numerous small infestations on alfalfa in the Salt River Valley.

Oregon      L. P. Redwood (February 2): A few pea aphids were found in a field near Forest Grove, where Austrian peas had been disked back in August into land which had grown this crop in 1930. Fields which had been seeded in October showed no aphids, on the other hand a few aphids were found on Austrian peas in a field which was seeded in early October near McKinville. The peas had made an unusually large growth for this time of year. No aphids were found on this crop in fields seeded in November. (February 12-23): The pea aphid increased in numbers during the mild weather of January and early February on vetch seeded for a cover crop in an orchard near Forest Grove. This vetch was seeded in August or early September, 1930. On February 12, aphids averaged 150 to each 100 sweeps of the net and vetch was just beginning to show injury. By February 23 there had been a considerable reduction in the number of aphids, averaged 30 to 100 sweeps of the net. This indicated a reduction of about 80 per cent which was probably due to a fungus disease which was present.

MELONS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Florida      J. R. Watson (February 24): The striped cucumber beetle is moderately abundant in the overglades.

Texas      F. L. Thomas (February 27): The striped cucumber beetle seen by R. K. Fletcher and S. L. Jones on February 5, in an alfalfa patch near College Station.

MELON APHID (Aphis roseae Glov.)

Mississippi      R. W. Hamner (February 24): Mr. Hamner reports that the melon aphid is very scarce this winter as compared to the four previous winters on its overwintering hosts, curly dock (Rumex crispus) and henbit (Lamium amplexicaule).

FICKLE WORM (Diaphania nitidalis Stoll)

Alabama      J. M. Robinson (February 27): Damage by cantaloupe worms is anticipated at Collinsville.

TURNIPS

TURNIP APHID (Rhopalosiphum pseudo brassicae Davis)

- North Carolina R. W. Leiby (February): This insect has been reported on cabbage plants from eastern Carolina. It is not known if it is abundant. This is a rather early record for its appearance in injurious numbers.
- Mississippi G. L. Bond (February 25): Turnip lice are quite numerous on turnips near Maselle.
- Texas F. L. Thomas (February 27): The turnip louse has been in evidence throughout the winter in Galveston County and began to drift with the wind in large number February 5, according to J. U. Roney, in charge of the Plant Lice Laboratory at Dickinson.

TURNIP ROOT APHID (Terophris populitransversus Riley)

- Mississippi J. P. Kislanko (February 26): The turnip root aphid is very abundant in the vicinity of Perkinston.

MUSHROOMS

A FUNGUS GNAT (Sciara sp.)

- Ohio M. P. Jones (January 23): The flies which were collected in a mushroom house at Columbus, January 2, have been determined as Sciara sp. by C. T. Greene.

Miscellaneous truck pests.

APHIDS (Aphididae)

- Mississippi Henry Dietrich (February 25): Aphids (undetermined at present) are extremely abundant on mustard, cabbage, and turnip at Lucedale. The unusual numbers of aphids this winter are no doubt due to mild and dry winter.

TARNISHED PLANT BUG (Lymus pratensis L.)

- Alabama J. M. Robinson (February 27): The tarnished plant bug is moderately abundant on vegetables and flowers at Auburn.
- Mississippi Henry Dietrich (February 25): The tarnished plant bug has been common on garden truck at Lucedale during February.

FOREST AND SHADE - TREE INSECTS

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Mississippi

H. Dietrich (February 25): Evergreen bagworms are extremely abundant on arborvitae in southern George County. A lady picked over 500 off one tree about 6 feet high and 6 feet in diameter; not much was left of the foliage.

BROWN-TAIL MOTH (Nygmia phaeorrhoea Don.)

New Hampshire

P. R. Lowry (February): The winter webs of the brown-tail moth are common and generally distributed over southeastern New Hampshire.

PINE

Mississippi

A PINE CONE MOTH (Carpocapsa torcuta Grote)

Mississippi

H. Dietrich (February 25): Lasneyresia torcuta Grote (identified by C. Heinrich from adults reared at Lucedale last spring). The larvae are again very abundant in cones of pines in cut-over areas, but scarce in virgin timber. The larvae have been taken from the cones of Pinus echinata, P. taeda, P. palustris and P. caribea, in southern Mississippi; especially Pearl River, Perry, Greene, George, and Jackson Counties. In cut-over areas of P. palustris where seed trees are far between, the cones are heavily infested, each cone having from 1 to 10 larvae; in the more heavily infested cones practically all seeds are destroyed. The larvae live in the pith of the cone and only go out into the seed to feed.

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

Florida

J. R. Watson (February 24): LeConte's sawfly has been reported defoliating pines.

A LECANIUM (Lecanium numismaticum Pettit & McDaniel)

Mississippi

H. Dietrich (February 25): Lecanium numismaticum is very abundant on young longleaf pine near Leakesville.



INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

ARBORVITAE

APHID (Aphididae)

South Dakota

H. C. Severin (February 19): Aphid eggs have passed the winter very successfully. We have no important fruit-tree aphids to speak of in South Dakota, but we have plenty of other aphids which give us considerable trouble, and these seem to have passed the winter very successfully.

AN APHID (Dilochus thujaefolia Theob.)

Ohio

E. W. Mendenhall (February 7): The American arborvitae used as understock for junipers were badly infested with the arborvitae aphid. The infestation was in one of the greenhouses in Springfield.

Mississippi

H. Dietrich (February 25): This aphid was general on arborvitae at Lucedale all winter, in a few cases evidently in destructive numbers.

Arizona

C. D. Lebert (February 25): The arborvitae aphid was very numerous on stems of arborvitae in a local nursery in Phoenix, February 24. Many plants coated with honey dew and black smut.

A SCALE (Coccidae)

Washington

Wm. W. Baker (February 5): Cuttings of Thuja were sent in from Chehalis by an inspector which were heavily infested with an immature scale similar to our common lecanium but smaller in size and differing somewhat from it. These cuttings were taken from shrubs growing out of doors and the young scales were quite active when the cuttings arrived.

RED SPIDER (Tetranychus telarius L.)

Virginia

M. P. Jones (March 3): Evergreens heavily infested with eggs of the red spider were collected at Lynchburg.

CAMELLIA

CAMELLIA SCALE (Lepidosaphes camelliae Boisd.)

Mississippi

H. Dietrich (February 25): The camellia scale is abundant on Camellia japonica at Lucedale.

CEDAR

WEEVILS (Pissodes spp.)

Mississippi

R. W. Harned (February 23): Weevils, very probably Pissodes deodarae Hopk., were found injuring Cedrus deodara plants at Hattiesburg on January 26.

H. Dietrich (February 25): Pissodes nemorensis Germ. was extremely abundant all winter at Lucedale on Cedrus deodara. The first adults were observed on October 29. No dying trees observed as yet at Lucedale. Evidently beetles did not oviposit on Cedrus this year.

PALES WEEVIL (Hylobius pales Boh.)

Mississippi

H. Dietrich (February 25): The weevil Hylobius pales was found feeding on bark of living Cedrus deodara.

EUONYMUS

EUNYMUS SCALE (Chionaspis euonymi Comst.)

Virginia

M. P. Jones (March 2): The euonymus scale was found slightly infesting climbing euonymus at Charleston and also observed on some shrubs at the Experiment Station at Norfolk.

FERN

FERN SCALE (Hemichionaspis aspidistrae Sign.)

Mississippi

H. Dietrich (February 25): The fern scale is quite prevalent on ferns at Lucedale and Richton.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

MOSQUITOES (Anopheles spp.)

Mississippi H. Dietrich (February 25): Mosquitoes (Anopheles punctipennis Say and A. quadrimaculatus Say) were abundant in Pascagoula swamp, George County, in January toward sundown on warm days.

HOUSE FLY (Musca domestica L.)

Mississippi H. Dietrich (February 25): House flies were present throughout the winter at Lucedale.

FLEAS (Siphonaptera)

Kansas H. R. Bryson (February 20): Fleas are reported as troublesome in barns and dwellings in some sections.

CHIGGER (Trombicula irritans Riley)

Mississippi H. Dietrich (February 25): I was much surprised to find myself covered with "lumps" due to chiggers, in January, after sitting on the ground sifting for insects and spiders in Pascagoula Swamp.

HORSE

HORSE BOTFLIES (Gastrophilus spp.)

Missouri F. D. Butcher (January): At the clinic held at Columbia January 19-21 it was learned that horse bots (Gastrophilus intestinalis DeG. and G. nasalis DeG.) had been a factor in the death of a horse.



HOUSEHOLD AND STORED-PRODUCTS

INSECTS

TERMITES (Isoptera)

- Arizona C. D. Lebert (January 1): Termites have done severe damage to a schoolhouse near Phoenix. Hardwood floor eaten in many places and subtimbers (pine) severely tunnelled. Several homes in Phoenix infested from slightly to severely with the subterranean termite. In most cases Heterotermes aureus Snyder. (February 25): The desert termite Amitermes arizonensis Banks was observed in January around roots of greasewood. Many winged individuals were out after heavy rains in February.
- Alabama J. M. Robinson (February 27): Termites (Reticulitermes spp.) are moderately abundant at Dothan, damaging an office building. Termites are moderately abundant at Athens, attacking floors and woodwork of a residence.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

- Mississippi M. R. Smith (February 21): An Argentine ant infestation has recently been reported from Foxworth. The definite limits of the infestation have not yet been determined.
- Alabama H. Dietrich (February 25): On Main Street, Livingston, we came across a large exhibit of balled plants from Jungle Gardens, New Orleans, La. On investigation we found active Argentine ants that evidently had established themselves. Inquiry at the restaurant where we had dinner showed that the ants were not all over town yet.

FIRE ANTS (Solenopsis spp.)

- Mississippi H. Dietrich (February 25): Fire ants (Solenopsis geminata Fab.) were very annoying and numerous in several houses in New Augusta last November.
- M. R. Smith (February 21): Fire ants (Solenopsis xylabni McCook) have been the cause of a number of complaints during the winter. The ants usually have constructed their nests around hearths or in the basement of houses and from these vantage points raid kitchens and pantries even in very cold weather. On one occasion our attention was called to a nest of fire ants in a greenhouse. Workers were not only gnawing into the base of small corn plants (approximately 6 inches high) but also carrying off barley seed from a sack near by.

HONEY ANT (Prenolepis imparis Say)

Mississippi

M. R. Smith (February 21): Jack Milton, State Plant Board Inspector at Corinth, sent in workers for determination. He stated that the ants were found infesting a house at Corinth. The kind of food the ants were eating was not mentioned. This species is very little affected by cold weather, as many observers have noted.

LARGE CARPENTER ANT (Camponotus herculeanus L.)

Kansas

H. R. Bryson (February 20): One carpenter ant frequenting a dwelling was reported on January 20 from Salina. There was a similar report from Manhattan. The mildness of the winter temperature has encouraged this pest in its foraging habits.

BOX ELDER BUG (Leptocoris trivittatus Say)

Oregon

Don C. Mote (February 24): Adults have been observed moving around on warm days. Quite a few reports have been received of their being abundant in houses and being somewhat of a nuisance.

HOUSE CRICKET (Gryllus domesticus L.)

New Hampshire

P. R. Lowry (February): Several records have been received in the last two months of this species in houses in Dover and Portsmouth.

Mississippi

R. W. Harned (February 23): Crickets were reported as very abundant in a residence at Meridian on January 9.

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon

L. P. Rockwood (February 27): Earwigs were out of winter quarters in late January and early February during period of mild springlike weather. Seen on sidewalks in Forest Grove.

Don C. Mote (February 24): European earwig<sup>males</sup> were observed moving about January 30. Two young second instar and a few females observed above ground at Newport, and on February 7 a male and a mating pair were observed at Portland.

CLOVER MITE (Bryobia praetiosa Koch)

Kansas

H. R. Bryson (February 13): The clover mite has been reported as troublesome in a dwelling in Kansas City. This pest was reported congregating in large numbers in the same house last fall. Owing to the exceptionally mild winter the adults have been successful in passing the winter.

INDIAN-MEAL MOTH (Plodia interpunctella Hbn.)

Mississippi H. Dietrich (February 25): The Indian-meal moth is badly infesting peanut-caramel candy in a drugstore at Lucedale. Adults emerged November 16 and throughout the winter.

RICE WEEVIL (Calendra oryzae L.)

Mississippi H. Dietrich (February 25): The corn weevil is very abundant in corn in southern Mississippi.

RUST-RED FLOUR BEETLE (Tribolium ferrugineum Fab.)

Mississippi H. Dietrich (February 25): The rust-red flour beetle is very common in dry cereals at one store in Lucedale.

MERCHANT GRAIN BEETLE (Oryzaephilus mercator Fawc.)

Mississippi H. Dietrich (February 25): The merchant grain beetle is abundant in peanut-caramel candy at Lucedale.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Mississippi H. Dietrich (February 25): Larvae of the tobacco beetle are abundant in old cigarettes and tobacco in a store in Lucedale; adults emerged February 19. Larvae, pupae, and dead adults were extremely abundant in a package of a patent rat remedy at Lucedale. The remedy was in a friction-top tin can and the contents were completely destroyed.



INSECT CONDITIONS IN PORTO RICO DURING THE FISCAL YEAR ENDED JUNE 30, 1930.

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico.

SUGARCANE

The sugarcane borer (Diatraea saccharalis Fab.) is always more serious on the south coast than elsewhere on the Island. According to Mr. Pedor Richardson, cane technologist at the Insular Experiment Station for the past several years, it is less injurious than it has been for years.

The sugarcane root caterpillar (Perforatrix sacchari Sein), according to Mr. Sein, is generally distributed throughout the sugarcane-growing sections of the Island and doing considerable damage in the aggregate.

Consensus of opinion is that white grubs (Phyllophaga spp.) have been less of a factor during the past few years on sugarcane than formerly. During this past year they were somewhat more abundant and injurious on the north coast but about as injurious as usual on the south coast.

The sugar company at Caguas reported considerable damage by the changa (Scapteriscus vicinus Scud.), especially on the more sandy types of soil. It also did considerable damage in Bayamon -- Aguas Buenas. In both the above cases the damage was to sugarcane. This insect is most injurious to sugarcane in the tobacco zone and the Turabo Valley, including Humacao, Las Piedras, and Juncos. It was also reported as severely damaging tomatoes in Caguas on the more sandy soils. The changa (Scapteriscus vicinus Scud.) did considerable damage in February and March to peppers being grown for canning purposes at Rio Piedras.

In May a considerable infestation of the yellow cane aphid (Sipha flava Forbes) started at Aguirre but ladybeetles were reported to have checked it before any undue amount of damage resulted. Often rather injurious during the beginning of the summer, especially during the dry spells and in the southwestern part of the Island. Apparently the past year was about normal for this pest attacking sugarcane.

TOBACCO

Horn worms (Protoparce sorta Joh. var. jamaicensis Butl.) were reported by J. A. B. Nolla as doing severe damage to tobacco during part of the year at Caguas.

The potato flea beetle (Epitrix cucumeris L.) has been generally present in both seed beds and in the fields of tobacco but not especially injurious except on newly set plants in the Cayey-Aibonito district.

Both the large tobacco suckfly (Dicranus luridus Gibson) and the smaller one (D. prasinus Gibson) were observed in many tobacco fields

but apparently they are not very injurious. In March, 1930, the larger tobacco budfly caused considerable trouble by destroying the buds and blossoms in a large cross-pollination test in a field in Caguas.

Cutworms (Noctuidae) have been generally present both in tobacco seedbeds and in the field but not especially injurious, except on newly set plants in the Cayey-Aibonito district.

### CITRUS

The Florida red scale (Chrysomphalus ficus Ashm.) and the purple scale (Lepidosaphes beckii Newm.) were about as injurious to citrus as usual.

White grubs (Phyllophaga spp.) were occasionally reported as injurious to young citrus trees.

Reports have been received of a little damage to citrus by the vaquita (Diaprepes spengleri L.)

A red spider (Tetranychus sp.) was more injurious on citrus than usual during the excessively dry spring and summer.

The citrus rust mite (Phyllocoptes oleivorus Ashm.) was more injurious to citrus than usual during the excessively dry spring and summer.

### COCONUT

The rhinoceros beetle (Strategus quadrifoveatus P. de B.) was destructive in almost all coconut plantings, but apparently more injurious along the eastern and southern coasts. The Extension Division has been conducting a clean-up campaign against this pest, which has been more injurious since the hurricane of 1928 than formerly.

### CASSAVA

A rare root weevil, Coslosternus sulcatulus Boehm., was found for the first time in Porto Rico in March, 1930, infesting about 2 acres of cassava, high above Comerio. Above 10 per cent of the underground stems were rendered worthless for use.

### BANANA

The banana root borer (Cosmopolites sordidus Germ.) is now generally distributed in most parts of the island and doing considerable injury to bananas and especially to plantains in many sections.

### COFFEE

The coffee leaf miner (Leucoptera coffecella Staint.) was more injurious than usual and more injurious in the wetter sections than in those with

less rainfall. In the extensive seed beds grown by the agricultural agents with the help of Red Cross funds for the rehabilitation of the coffee industry the pest, owing to systematic and thorough spraying, was of little importance.

#### BEANS

The beetle (Diabrotica graminea Baly) has been more abundant and injurious than previously, owing no doubt to the increase of plantings of string beans since the hurricane of September, 1928. Severe infestations were reported from Caguas in the spring and summer of 1929.

A bean leaf beetle, Ceratomyza denticornis Fab., was generally present in all bean plantings and doing some damage, especially where no spraying had been done.

The bean lacebug, (Corythucha gossypii Fab.) was injurious to several small plantings of lima beans during the summer of 1930 at Rio Piedras and at Palo Seco; the leaves turned whitish or brownish and some fell, greatly reducing pod formation.

A leafhopper, Empoasca sp., was common and often very injurious to small patches of beans which were unsprayed.

The bean pod borer (Maruca testulalis Geyer) was not very common in lima or string beans during the spring and summer, probably owing to the fact that the host plant is scarce during these seasons.

The bean leaf roller, (Goniurus proteus L.) was present in most plantings of beans that were examined.

#### EGGPLANT

The potato flea beetle (Epitrix cucumeris Harr.) was very injurious, especially in seed-beds and in the field at Rio Piedras from March to May, 1930, but most of the damage in the field as usual was done from late September on.

The melon aphid (Aphis gossypii Glov.) was more or less injurious to eggplant all over the Island throughout the year.

The eggplant lacebug (Corythucha monacha Stal) has been common and often very injurious where spraying has not been frequent and thorough.

Climbing cutworms (Noctuidae) did considerable damage to the buds and to young eggplant on experimental plots at the Insular Experiment Station at Rio Piedras.

A leaf tier (Psara perniciosa Walk.) has done considerable damage to eggplant both in the seed bed and in the field at Rio Piedras from September to January, but little trouble has been noticed since.



## ONION

The onion thrips (Thrips tabaci Lind.) was generally present during the drier periods and was often very injurious to onions from January to July.

Cutworms (Noctuidae) were injurious to onions at Rio Piedras and Cayey in onion seed bed during January and in the field from November to March.

## POTATOES, IRISH AND SWEET

Around 300 acres of Irish potatoes were grown in the Island during the year. An inspection tour to demonstration plots at Comerio and Barranquitas late in February when the crop was fairly well along showed a fair amount of flea-beetle (Epitrix cucumeris Harr.) damage, a few leafhoppers (Empoasca fabae Harr.), and a few aphids (Aphidae).

The sweet-potato weevil (Cylas formicarius Fab.) was present and frequently very injurious in apparently all parts of the Island.

A leaf miner (Agromyza sp.) has been found in several localities and while fairly common in some patches of sweet potatoes is of only minor importance.

## ALFALFA

A moth (Dichomeris piperata Wlsm.) was first found in Porto Rico last year (1929) reducing the crop of alfalfa up to at least 30 per cent on a 2-acre experimental plot under irrigation at the sub-experimental plot at Isabela. The leaves are webbed together by the caterpillar and skeletonized. It was not present, however, on a small planting at Rio Piedras.

A leaf-miner, Agromyza sp., was common in the field at Rio Piedras during the early summer but apparently not abundant enough to be injurious to alfalfa.

## COWPEA

The cowpea pod and stalk borer (Fundella cistipennis Dyar) was reared from pods at Rio Piedras in May.

The tobacco budworm (Heliothis virescens Fab.) larvae were fairly common, eating large holes in the pods at Rio Piedras in May. Moths emerged June 1 and 2, 1930, from pupae formed from May 20 to May 23.

The lima bean pod borer (Etella zinckenella Treit.) was reared from cowpea pods at Rio Piedras in May.

## COTTON

Several outbreaks of the cotton leaf worm (Alabama argillacea Hbn.) occurred throughout the cotton section, necessitating considerable spraying.

The pink boll worm (Pectinophora gossypiella Saund.) was generally distributed throughout the cotton sections of the north and south coasts but was not very injurious to cotton.

A leaf miner (Nepticula gossypii Fbs. & Leon.) was first discovered in March, 1930, and described as a new species. It was present in the majority of fields of cotton on the south coast in the spring until crops were harvested, often with nearly all the leaves full of miners, but apparently little damage was done to the crop. No infestation was found on north coast.

Cotton stainers (Dysdercus andreae L. and D. neglectus Uhl.) were generally distributed but not very injurious, although abundant in several cotton fields on the south coast in March, 1930.

The cotton lacebug (Corythucha gossypii Fab.) was present in small numbers on occasional leaves of cotton in various sections.

The cotton aphid (Aphis gossypii Glov.) was often found in small numbers on the leaves of cotton.

A scale insect, Saissetia nigra Nietn., was generally present and often fairly abundant on cotton but apparently was of little importance.

A leafhopper, Empoasca sp., was often found in small numbers throughout the cotton-growing sections but was not injurious.

A leaf mite (Eriophyes gossypii Glov.) was generally distributed, but scarce and doing but little injury.

A LIST OF INSECT PESTS IN HONDURAS AND GUATEMALA DURING 1930.

Marston Bates,  
Lancetilla Experiment Station, Tela, Honduras.

Honduras (all records from Tela).

Insect	Host plant
<u>Aspidiotus destructor</u> Sign.	<u>Eugenia jambolana</u> (Malabar-plum)
<u>Aspidiotus lataniae</u> Sign.	<u>Averrhoa carambola</u> (Carambola)
<u>Saissetia oleae</u> Bern.	<u>Lawsonia inermis</u> (Henna)
<u>Saissetia hemisphaerica</u> Targ.	<u>Acacia sapota</u> (Sapodilla)
	<u>Annona muricata</u> (Soursop)
	<u>Chrysophyllum cainito</u> (Star-apple)
	<u>Citrus</u> sp.
	<u>Coffea</u> sp.
	<u>Diospyros kaki</u> (Kaki persimmon)
	<u>Garcinia spicata</u>
<u>Pseudococcus brevipes</u> Ckll.	<u>Ananas sativus</u> (Pineapple)
	<u>Saccharum officinarum</u> (Sugarcane)
<u>Pseudococcus virgatus</u> Ckll.	<u>Annona</u> sp.
<u>Coccus hesperidum</u> L.	<u>Albizia moluccana</u>
	<u>Guillemia utilis</u>
<u>Pseudaonidia articulatus</u> Morg.	<u>Diospyros kaki</u> (Kaki persimmon)
	<u>Tabernaemontana coronaria</u> (Cape-jasmine)
<u>Ceroplastes floridensis</u> Comst.	<u>Citrus grandis</u> (Grapefruit)
<u>Hemichionaspis minor</u>	
<u>strachani</u> Colley	<u>Severine buxifolia</u>
<u>Icerya montserratensis</u> R. & H.	<u>Citrus</u> spp.
<u>Parlatoria pergandii</u> Comst.	<u>Severina buxifolia</u>
<u>Lepidosaphes coronaria</u>	<u>Tabernaemontana coronaria</u> (Cape-jasmine)
<u>Trionymus sacchari</u> Ckll.	<u>Saccharum officinarum</u> (Sugarcane)
<u>Chrysomphalus distyospermi</u> Morg.	<u>Garcinia spicata</u>
<u>Vinsonia stellifera</u> Westw.	<u>Garcinia spicata</u>
<u>Aphis gossypii</u> Glov.	<u>Annona squamosa</u> (Custard apple)
	<u>Hibiscus rosa-sinensis</u> (Chinese hibiscus)
<u>Cerataphis lataniae</u> Boisd.	<u>Ptychosperma</u> sp.
<u>Frankliniella insularis</u> Frank.	<u>Citrus</u> spp.
<u>Papilio anchisiades</u> Esper.	<u>Citrus</u> spp.
<u>Solenopsis geminata</u> Fab.	<u>Citrus</u> spp.
<u>Utetheisa ornatrix</u> L.	<u>Crotalaria</u> spp.
<u>Stenomoma annonella</u> Sepp.	<u>Annona muricata</u> (Soursop)
<u>Megalura pelens</u> Solz.	<u>Ficus carica</u> (Common fig)
<u>Empis pallida</u> Feld.	<u>Citrus</u> spp.
<u>Cocytius antaeus</u> Drury	<u>Annona muricata</u> (Soursop)
<u>Trigona analthea</u> Oliv.	<u>Citrus</u> spp.
<u>Trigona sylvestriana</u> Vachal	<u>Citrus</u> spp.



Guatemala

<u>Insect</u>	<u>Host plant</u>
<u>Toxoptera aurantiae</u> Foy.	<u>Theobroma cacao</u> (Cacao) at Retalhuleu
	<u>Coffea arabica</u> (Arabian coffee)
	<u>Citrus</u> spp.
<u>Neotoxoptera</u> n. sp.	<u>Delichos</u> sp. at Chimaltenango
<u>Aphis gossypii</u> Glov.	<u>Persea americana</u> (Avocado) in Antigua region
	<u>Eriobotrya japonica</u> (Loquat) in Antigua region
<u>Brevicoryne brassicae</u> L.	Cabbage at Tumbador, San Marcos
<u>Macrosiphum luteum</u> Theob.	Orchid at Tumbador, San Marcos
<u>Myzaphis</u> spp.	<u>Rosa</u> sp. at Colombo and San Marcos.
<u>Myzus persicae</u> Sulz.	<u>Citrus</u> sp.
<u>Cicadella instrata</u>	<u>Coffea arabica</u> (Arabian coffee)
	<u>Grevillea</u> sp.
<u>Saissetia hemisphaerica</u> Targ.	<u>Achras sapota</u> (Sapodilla)
	<u>Annona muricata</u> (Bursop)
	<u>Chrysophyllum cainito</u> (Star apple)
	<u>Citrus</u> sp.
	<u>Coffea</u> sp.
	<u>Diospyros kaki</u> (Kaki persimmon)
	<u>Garcinia spicata</u>
<u>Frankliniella</u> n. sp.	<u>Rosa</u> spp. at Colombo
<u>Frankliniella</u> n. sp.	<u>Coffea arabica</u> (Arabian coffee) at Patulul
<u>Frankliniella acheta</u> Hood	<u>Prunus malus</u> at Quezaltenango
<u>Frankliniella insularis</u> Frank.	<u>Citrus</u> spp.
<u>Frankliniella occidentalis</u> Perg.	<u>Prunus malus</u> at Quezaltenango
<u>Frankliniella stylosa</u> Hood	<u>Coffea arabica</u> (Arabian coffee) at Patulul
	<u>Rosa</u> sp. at San Marcos
<u>Eantis pallida</u> Feld.	<u>Citrus</u> spp.
<u>Utotheisa ornatrix</u> L.	<u>Crotalaria</u> spp.
<u>Papilio anchisiades</u> Esper.	<u>Citrus</u> spp. on north coast



LELAND STANFORD JUNIOR  
UNIVERSITY LIBRARY

# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

April 1, 1931.

Number 2

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES

FOR MARCH, 1931.

We wish to call the attention of our readers to the reports on insect conditions in tropical American countries which we are introducing in this volume of the Survey Bulletin. In the first number of this volume insect conditions in Porto Rico were reported by M. D. Leonard, and Marston Bates gave a report on insect pests of Honduras and Guatemala. In this number we have reports from Porto Rico, Honduras, Guatemala, and Mexico. The cosmopolitan aspect that entomology has assumed makes these contributions extremely valuable.

The Hessian fly is reported as comparatively scarce in Virginia and Ohio. On the other hand in western and southeastern Iowa there appears to be a very heavy infestation.

Indications of possible chinch bug trouble have been observed in central Illinois, central Missouri, and southeastern Kansas.

The first observation of eggs of the corn ear worm was reported from Galveston County, Texas, on February 10.

Local damage to peas, vetch, and alfalfa by the pea aphid was reported from the Salt River Valley of Arizona and the Willamette Valley of Oregon.

Eggs of fruit aphids appear to be unusually scarce throughout the entire eastern part of the United States, westward to Kansas.

Throughout the Middle Atlantic and South Atlantic States the codling moth is abnormally abundant. The first observation of pupation was reported March 30 from South Carolina.

Throughout the New England and Middle Atlantic States the eastern tent caterpillar is not numerous. On the other hand, reports of unusual numbers of this insect have been received from Arkansas and Texas. By the 22d of March caterpillars were about full grown in the vicinity of College Station, Tex., and eggs were hatching on March 12 at Fayetteville, Ark.

The San Jose scale is apparently increasing in the Middle Atlantic States and the East Central States. A very high winter survival is reported from central Illinois running from 60 to 70 per cent, while in this district a normal survival is only from 25 to 30 per cent. Survival was also high in the Great Basin section.

The European red mite is reported as unusually abundant in New England and very scarce throughout the Middle Atlantic States.

By March 27, approximately 7 per cent of the overwintering larvae of the oriental fruit moth had pupated at Thomaston, Ga., while we have a report of the emergence of this insect in cages in South Carolina on March 9.

The first overwintering adult of the plum curculio was collected in an orchard at Thomaston, Ga., March 25. Last year the curculio was first observed at this place on March 17. At this time last year over a thousand beetles were collected while only one was collected March 25 this year. Petals were falling from peach trees of the Hiley and Elberta varieties on this date and this advance of the peach crop as compared with the curculio emergence may make it possible to harvest Elberta peaches before the second brood appears. The plum curculio is also emerging later than usual in northern Florida.

Adults of the pear psylla were observed on March 22 at Amherst, Mass.

The green citrus aphid is doing serious damage on the lower east coast of Florida, and there are occasional heavily infested trees as far north as Marion County. Present indications are, however, that the damage will be light this year.

The cottony-cushion scale is again appearing in scattered infestations in the Salt River Valley of Arizona.

The vegetable weevil is spreading around the Gulf of Mexico, having been reported from four counties in Texas and four additional counties in Florida.

The western spotted cucumber beetle left hibernation quarters near Forest Grove, Oreg., January 25, practically a month earlier than last year. In spite of this early issuance, egg development seems later than at this time last year. In March the adults were very numerous in Austrian winter peas; all specimens observed were females.

The first Colorado potato beetles reported this season were from Biloxi, Miss., and College Station, Tex., March 21.

The cabbage aphid is unusually abundant in the vicinity of Norfolk, Va., and in parts of South Carolina.

The beet leafhopper is reported as very abundant in the Lewis Falls district of Idaho. Winter mortality appears to have been very light in this territory.

The California tent caterpillar is extremely prevalent around Phoenix, Ariz., this year, where it is defoliating cottonwood trees and severely injuring apricots.

The Birch leaf-mining sawfly, Phyllotoma nemorata Fallén, is reported from Essex County in New York, where it seems to be well established.



GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- West Virginia L. M. Peairs (March 24): Grasshoppers are moderately abundant at Morgantown, the overwintering forms being active.
- Florida J. R. Watson (March 21): Grasshoppers are moderately abundant - about as usual.
- South Dakota H. C. Severin (March 23): We expect more grasshopper trouble over the entire State than we had last year. Some outbreaks are expected in south central South Dakota.
- Nebraska M. H. Swenk (March 20): Eggs of grasshoppers, Melanoplus spp. are moderately abundant.
- Kansas H. R. Bryson (March 20): Grasshoppers, M. bivittatus Say and M. differentialis Thos., are moderately abundant in the western half of Iowa.
- Missouri L. Hasenan (March 23): Grasshoppers are moderately abundant at Columbia. Those reported as hatching early in the year in central Missouri have proved to be a species of Oedipodinae. Not infrequently we find partly grown nymphs of this species present in sunny places before the first of March. At the present time, March 23, nymphs at Columbia were found quite abundant in lawns, meadows, and pastures.
- Mississippi R. W. Harned and assistants (March): A few adults were seen flying on March 18 at Lucedale.
- Alabama J. M. Robinson (March 24): Grasshoppers are moderately abundant in Auburn - adults of Schistocerca americana Drury found in the woods.
- Wyoming C. L. Corlins (March 19): Grasshoppers are moderately abundant in northeastern Wyoming and central Wyoming. Sheridan County will likely have a serious outbreak. We predict localized damage in seven other counties besides Sheridan this summer, and severe damage in Sheridan County.
- Utah G. F. Knowlton (March 23): A few species of grasshoppers that winter over in the nymphal stage are now active in northern Utah. These nymphs are moderately abundant.
- Arizona C. D. Lebert (March 23): Grasshoppers, Melanoplus sp., are scarce in the Salt River Valley.

CUTWORMS (Noctuidae)

- Florida J. R. Watson (March 21): The cutworms are moderately abundant. We have not received so many complaints as usual for March, owing to cold weather.
- Nebraska M. H. Swenk (March 20): Cutworms are beginning to show activity and are moderately abundant.
- Kansas H. R. Bryson (March 20): Cutworms are reported as moderately abundant.
- Missouri L. Haseman (March 23): Two species of cutworms (undetermined) are moderately abundant at Columbia.
- Mississippi R. W. Harned and assistants (March): Cutworms are reported as moderately abundant in scattered localities.
- Texas F. L. Thomas (March): Some cutworms were found in the pupal stage at College Station.
- Utah G. F. Knowlton (March 23): Cutworms have been observed but are not yet causing damage.
- Arizona C. D. Lebert (March 23): Cutworms. (species undetermined) are moderately abundant in the Salt River Valley.
- California Stewart Lockwood (March 18): Reports have come to the office that a cutworm (species unknown) has been responsible for some amount of damage to grapes in Stanislaus, Merced, Madera, Fresno, and Tulare Counties. This may be the greasy cut worm.

CEREAL AND FORAGE CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Virginia C. R. Willey (March 24): The Hessian fly is very scarce in the Shenandoah Valley. I have found none in several fields which I have examined.
- Ohio J. S. Houser (March 24): The Hessian fly is scarce.
- Iowa C. J. Drake (March 20): The infestation is very serious in the counties of Woodbury, Monona, and Harrison. In these counties a considerable acreage of wheat was planted before the fly-free date. The use of combines has also increased the amount of volunteer wheat, especially in wheat fields sown to sweet clover. During the warm weather in October a considerable number of flies emerged from the early seeded fields and

volunteer wheat. As a result, wheat fields drilled as late as the 4th of October in Monona County are heavily infested with the Hessian fly. The warm weather during the fall and winter has enabled a large percentage of the maggots to complete their development during the winter months. At the present time about 1 per cent of the flies are in the maggot stage and about ready to transform into pupae. Reports of infestation in early-seeded fields have been received from a number of counties in southern Iowa. In a few counties perhaps as much as 50 per cent or more of the wheat will be destroyed.

H. E. Jacques (March 23): The situation seems to be very serious in many parts of the State although a number of counties report "no wheat" and others apparently only a light infestation. Lee, Woodbury, and Harrison Counties report a heavy abundance of wheat.

G. C. Decker (March 25): I have recently made a second survey trip to Lee and adjacent counties and find the situation there almost as bad as we found it in Monona and Western Counties. Many fields examined now show from 30 to 80 per cent of the plants infested and a count of from 25 to 200 flyseeds per 100 plants.

Nebraska W. E. Svent (March 20): The Hessian fly is found in moderate abundance.

Kansas H. R. Bryson (March 20): The Hessian fly is found in moderate abundance in the central and northwestern parts of the State.

Missouri L. Haseman (March 23): The Hessian fly is moderately abundant in central Missouri. Seems to have wintered well. Specimens collected March 19 had 50 per cent pupae on March 23.

#### CORN

#### CHINCH BUG (*Blissus leucotermis* Say)

Illinois W. P. Flint (March 19): The chinch-bug mortality for the past winter has been very low. If present weather conditions continue, severe damage from this insect will occur throughout central Illinois.

Kansas W. R. Bryson (March 20): Chinch bug moderately abundant in 22 counties in southeastern Kansas. Winter quarters well burned last December.

Missouri L. Haseman (March 23): The chinch bug has wintered well but is not yet moving.



CORN EAR WORM (Heliothis obsoleta Fab.)

- Florida J. R. Watson (March 21): There have been no complaints of corn ear worms.
- Missouri L. Hasenan (March 23): The corn ear worm wintered almost perfectly 2 to 4 inches below the surface.
- Texas F. L. Thomas (March 20): The first eggs were found in Galveston County by J. N. Roney on February 10. Two larvae were found on mustard on March 2.

ALFALFA, CLOVER, ETC.

PEA APHID (Illinoia pisi Kalt.)

- Arizona C. D. Lebert (March 23): The pea aphid is very abundant this spring on peas, alfalfa, and vetch in the Salt River Valley. In many cases the plants are so laden with aphids that they are weighted down flat upon the ground and the foliage is covered with honey dew. Many pea plants have been killed on the experimental farms near Mesa. Hymenopterous parasites, syrphids, and ladybeetles were noticed to be working on the aphids.
- Oregon Insect Pest Report, Ore. Agr. Coll. and Exp. Sta. (March): There will probably be local damage to vetch and peas this year as there is every year. The number of pea aphids in the field at the present time does not indicate a general outbreak unless exceedingly favorable weather occurs. Mr. L. P. Rockwood reports a survey of four or five Austrian winter field pea fields near Corvallis in March resulted in an average of two aphids to one hundred sweeps of the net. Very scarce. The pea aphid was just beginning to damage a vetch crop in an orchard near Kansas City community, Washington County, February 12. This vetch was seeded early in August, 1930. A fungous disease, Entomophthora aphidis Hoffman, was just beginning to work on the aphids. By February 23, there was a reduction in numbers of aphids by about 75 per cent, probably due to the fungous disease. No pea aphid found on Austrian peas near Forest Grove except a few in one poor field which had been disked back on the same land in August, 1930.

CLOVER HAY WORM (Hyponomea costalis Fab.)

- Minnesota A. G. Ruggles (March 23): The clover hay worm was present in an alfalfa stack at Austin.

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

Alabama J. M. Robinson (March 24): About one-third of the adults of cowpea curculio active in hibernation cage March 10.

CLOVER MITE (Bryobia praetiosa Koch)

Missouri L. Haseman (March 23): The usual early-season dispersal of the common red spider, which on examination seems to be the common clover red spider, is attracting attention. Complaints regarding it show that it is unusually abundant crawling on the sunny sides of buildings, as well as in homes.

F R U I T I N S E C T S

APPLE

APHIDS (Aphiidae)

Massachusetts A. I. Bourne (March 25): Orchard plant lice appear to be comparatively scarce quite generally over the State.

New Jersey Thos. J. Headlee (March 5): Aphid eggs are less abundant than last year but I should also say that ladybeetles are likewise less abundant and that the chances of a plant-louse outbreak, provided favorable weather conditions exist in the spring, are better than for two or three years past.

Vermont H. L. Bailey (March 25): The fruit aphids are moderately abundant. Eggs of the green apple aphid (Aphis pomi DeG.) have been noted.

Connecticut W. E. Britton (March 24): Fruit aphids are scarce. Some eggs are observed on twigs.

Pennsylvania H. N. Worthley (March 23): Aphid eggs are scarce on apple trees.

Maryland Ernest N. Cory (March 25): There is a noticeable absence of aphid eggs.

Delaware L. A. Stearns (March 23): The eggs of fruit aphids were found in moderate abundance throughout the State.

West Virginia L. M. Peairs (March 24): Fruit aphids are scarce in Jefferson County. The eggs of all species are hard to find.

Virginia C. R. Willey (March 24): Fruit aphids are scarce in the Shenandoah Valley. The eggs are hard to find and I have seen no live aphids to date.

- South Carolina Alfred Luthen (March 25): The rosy apple aphid (Anuraphis roseus Baker) is moderately abundant in the northwestern part. Young nymphs of rosy aphid were found on apple buds March 18. the
- Georgia C. H. Alden (March 20): The fruit aphids (green apple aphids) are scarce.
- Ohio J. S. Houser (March 24): Fruit aphid eggs are scarce.
- E. W. Mendenhall (March 24): Winter eggs of Aphis pomi are moderately abundant.
- Kansas H. R. Bryson (March 20): Fruit aphids are scarce.
- Missouri L. Haseman (March 23): The fruit aphids are moderately abundant. The apple-oat louse (Rhopalosiphum prunifoliae Fitch) is less abundant than usual. There are still eggs on this date.
- Arizona C. D. Lebert (March): The apple-grain aphid, was found to be fairly abundant on wheat, barley, and oats at the experimental farms near Mesa, on March 22.
- Oregon Insect Pest Report, Ore. Agr. Coll. and Exp. Sta. (March): Fruit aphids have been active since January in Umatilla County.

#### LEAFHOPPERS (Cicadellidae)

- Virginia C. R. Willey (March 24): Adult leafhoppers, Erythroneura harti Gill. and E. obliqua Say, are moderately abundant under the leaves. E. obliqua are the more numerous.
- Connecticut W. E. Britton (March 24): The eggs of apple leafhoppers are very abundant in twigs.
- Kansas H. R. Bryson (March 20): Apple leafhoppers are found in moderate abundance.
- Missouri L. Haseman (March 23): Apple leafhoppers are moderately abundant and are active on warm days.
- Mississippi G. I. Worthington (March 21): Apple leafhopper damage to cherry trees from last year is severe at Clarksdale.

#### CODLING MOTH (Carpocapsa pomonella L.)

- Maryland E. N. Cory (March 25): I believe the carry-over of the codling moth is above normal.
- Pennsylvania T. L. Guyton (March 21): The codling moth is unusually abundant in orchards in the eastern part of the State.



H. N. Worthley (March 23): The codling moth is moderately abundant. About 90 per cent of the hibernating larvae have survived to date.

South Carolina A. Lutken (March 25): Pupae were found in an orchard at Walhalla, March 30.

Georgia C. H. Alden (March 20): The codling moth has not started to pupate yet.

Kansas H. R. Bryson (March 20): The codling moth is very abundant in the south-central part of the State.

Missouri R. M. Jones (March 25): The heavy carry-over of the codling moth larvae and the mild winter should result in a heavy emergence of spring brood moths.

Utah G. F. Knowlton (March 23): Codling moth counts made up to date show an overwintering mortality of but 20 per cent, in spite of the severe winter.

Oregon D. C. Mote (March 23): The codling moth has been observed at the larval stage in Willamette Valley.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Vermont H. L. Bailey (March 25): From observations as to egg masses in Windsor and Windham Counties the eastern tent caterpillar is moderately abundant.

Massachusetts A. I. Bourne (March 25): From all the information at hand at the present time and from what observation I have had the opportunity to make in the immediate vicinity of Amherst, this species is not very abundant, although a considerable amount may develop later in Bristol and Plymouth Counties, where the pest was quite plentiful in 1930.

Connecticut W. E. Britton (March 24): The eastern tent caterpillar is scarce, few eggs being present.

New Jersey T. J. Headlee (March 5): Eggs of the tent caterpillar, while not entirely absent, are pretty nearly so and an outbreak of this insect is hardly to be anticipated.

Arkansas W. J. Baerg. (March 14): Eggs began hatching on March 12 at Fayetteville. Egg masses are apparently numerous this year.

Texas F. L. Thomas (March 22): M. americana is, as usual, abundant this time of the year in the woods around College Station. Caterpillars are about full grown and many of the Crataegus bushes are defoliated. Did not observe any signs of parasitism.

SAN JOSE SCALE (*Aspidiotus perniciosus* Comst.)

- Connecticut W. E. Britton (March 24): The San Jose scale is scarce.
- New York C. R. Crosby (March 26): The San Jose scale is generally more abundant than for several years.
- Pennsylvania T. L. Guyton (March 21): The San Jose scale is very abundant, especially in the southeast.
- H. N. Worthley (March 23): The San Jose scale is moderately abundant at State College. There is about 50 per cent survival to date.
- New Jersey Thos. J. Headlee (March 5): The San Jose scale can not be considered an insect difficult to control under New Jersey conditions but there is some evidence in certain old apple orchards that its vigor may be rising. I suppose this means that its parasitic enemies have become considerably reduced. There is nothing, even in these old orchards, of a threatening character as yet but the difficulty of securing satisfactory control with insecticides gives me the feeling that we must watch our step.
- Delaware L. A. Stearns (March 23): The San Jose scale is slightly more abundant than usual.
- Georgia C. H. Alden (March 24): The San Jose scale is scarce at Cornelia and moderately abundant at Thomaston.
- Illinois W. P. Flint (March 19): An unusual percentage of the insect survived the winter in Central Illinois. In normal years from 25 to 30 per cent survival occurs. Counts made by Mr. Bigger, Mr. Farrar, Mr. Chandler, and others indicate that from 60 to 70 per cent of the scale have survived the winter 1930-31.
- Indiana J. J. Davis (March 28): The San Jose scale is abundant on apple and peach at Losantville.
- Kansas H. R. Bryson (March 20): The San Jose scale is reported as being moderately abundant.
- Missouri L. Haseman (March 23): The San Jose scale is scarce. Over the State as a whole it is in satisfactory shape as regards control.
- Mississippi R. W. Harned and assistants (March): The San Jose scale appears to be unusually abundant in most sections of the State.

- Utah G. F. Knowlton (March 23): Dr. F. E. Stephens reports San Jose scale damage as being very severe west of Provo and at American Fork, and that several orchards are being pulled out because of the severe damage from this insect.
- Idaho Claude Wakeland (March 23): The San Jose scale is moderately abundant at Lewiston; 8,209 scales were examined preparatory to spray experiments, and 62.5 per cent found to be alive.

Oregon Insect Pest Report, Ore. Agr. Coll. and Exp. Sta. (March): The San Jose Scale is moderately abundant in Malheur, Umatilla, and Jackson Counties, while in Josephine County it is reported as being more abundant than it has been for the past ten years.

FRUIT TREE LEAF ROLLER (Archips argyrospila Wals.)

- Idaho Claude Wakeland (March 23): The winter mortality was extremely light.
- Wyoming C. L. Corkins (March): The fruit tree leaf roller is scarce.

APPLE CURCULIO (Tachyoterellus quadrigibbus Say)

- Kansas H. R. Bryson (March 20): The apple curculio is moderately abundant in Doniphan and Atchison Counties.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

- Ohio J. S. Houser (March 24): The round-headed apple tree borer is unusually abundant, judging from reports received by the department.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

- Vermont Harold L. Bailey (March 25): Reports have been received of considerable abundance of eggs at Waitsfield, Washington County.

Massachusetts A. I. Bourne (March 25): The condition throughout the State, while somewhat spotty may be said to indicate that the red mite will be considerably more abundant than it was last year.

New Jersey Thos. J. Headlee (March 5): Red Mite eggs are less abundant than last year but I should also say that ladybeetles are likewise less abundant and that the chances of a plant louse outbreak, providing favorable weather conditions exist in the spring, are better than for two or three years past. There are decidedly more red mite eggs on peach trees than I have seen in the past several years, which may or may not



mean an outbreak on peach.

- Maryland E. N. Cory (March 25): There is a noticeable absence of red mite eggs.
- North Carolina R. W. Leiby (February 23): Apple twigs sent to the office at Raleigh from Blowing Rock February 23, were found to be heavily infested with eggs.

### PEACH

#### PEACH BORER (Aegeria exitiosa Say)

- Georgia C. H. Alden (March 20): The peach borer is scarce at Cornelia.
- O. I. Snapp (March 20): As usual this insect is causing considerable damage in peach orchards in Fort Valley that were not wormed or treated.
- Missouri L. Haseman (March 23): The peach borer, (mostly small larvae) is moderately abundant. Some complaints are being received.
- Mississippi R. W. Harned and assistants (March): The peach borer is reported as moderately abundant in the southeastern and northwestern sections of the State.

#### ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

- Connecticut W. E. Britton (March 24): The oriental fruit moth is moderately abundant.
- Maryland E. N. Cory (March 25): The carry-over of the oriental fruit moth is above normal.
- Delaware L. A. Stearns (March 23): The oriental fruit moth shows no pupation as yet.
- Pennsylvania T. L. Guyton (March 21): The oriental fruit moth is moderately abundant.
- South Carolina Alfred Lutton (March 25): Adult oriental fruit moths were emerging in cages on March 9 in the northwestern part of the State.
- Georgia W. H. Clarke (March 27): Approximately 7 per cent of the overwintering larvae have pupated in the insectary at The Peach Experiment Station, Thomaston. No moths have emerged to date.

C. H. Alden (March 20): The oriental fruit moth is moderately abundant at Cornelia; and there has been no pupation. It is scarce at Thomaston and few have pupated.

Ohio

E. W. Mendenhall (March 24): The oriental fruit moth is moderately abundant in young peach stock.

Mississippi

N. L. Douglass (March 21): The oriental fruit moth is moderately abundant in northern Mississippi.

PLUM CURCULIO (Conotrachelus nemoralis Hbst.)

Delaware

L. A. Stearns (March 23): None of the plum curculios have emerged from hibernation as yet.

Georgia

O. I. Snapp (March 20): No adults have appeared from hibernation to date in Fort Valley. Jarring for the first adults has been conducted daily since March 12. The appearance of adults from hibernation is much later this year than usual when compared with the present stage of development of the fruit. This is due to the cool weather that has prevailed since the trees started to bloom about the first of March. These insects come out of hibernation when the mean temperature has been above 60° F. for several successive days. Only one day since March 1 has the mean temperature reached 60° F. Petals are now falling from Hiley and Elberta peach trees. The late appearance of the curculio from hibernation this year, may prevent the development of a second brood of larvae before Elberta harvest.

C. H. Alden (March 20): The plum curculio is scarce at Cornelia and Thomaston; no beetles have emerged yet.

W. H. Clarke (March 25): The first overwintering adult was collected in the orchard today, at Thomaston. Only a single specimen was caught. Last year the date of the first curculio caught by jarring was March 17. Approximately 1,000 adults were collected by jarring in the same orchard on the same date last year, March 25, 1930.

Florida

J. R. Watson (March 21): The plum curculio is late in emergence. A very few have been observed at Gainesville.

Kansas

H. R. Bryson (March 20): The plum curculio is reported as moderately abundant.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn.)

Georgia O. I. Snapp (March 19): These beetles are appearing in numbers on peach trees at Americus.

TERRAPIN SCALE (Eulecanium nigrofasciatum Ferg.)

Virginia C. R. Willey (March 24): A severe infestation of the terrapin scale was discovered by an orchardist in a block of peach trees at Woodstock.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Massachusetts A. I. Bourne (March 25): On March 22, a rather unseasonably warm day, we went to Ashurst in a pear block, which was in a very favorable position, several specimens of the pear psylla appearing on the twigs. As yet there is no indication of egg laying.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi R. W. Harned and assistants (March): The rusty plum aphid is moderately abundant at Wiggins and McComb and very abundant at Centerville and Natchez.

Texas F. L. Thomas (March 25): The rusty plum aphid is earlier than usual and abundant at Somerville, Burlington County.

A PYRALID (Mineola scitulella Hlst.)

Idaho Claude Wakeland (March 23): Mineola scitulella Hlst. is just coming out of hibernacula on prune trees in the Boise Valley area.

PECAN

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Alabama J. M. Robinson (March 24): The pecan nut case bearer is present at Prattville, and growers have requested control measures.



PECAN CASE BEARER (Acrobasis juglandis LeB.)

Mississippi Henry Dietrich (March 21): Pecan leaf case bearers are present sparingly in hibernacula on pecan in orchards in George County.

HICKORY SHUCK WORM (Lasneyresia caryana Fitch)

Mississippi Henry Dietrich (March 21): Pecan shuck worms are mostly in the pupal stage at Lucedale; not abundant.

PECAN COSSID (Cossula magnifica Streck.)

Mississippi Wm. L. Gray (March 21): The hickory cossid is moderately abundant on pecan at Natchez.

TWIG GIRDLER (Oncideres cingulatus Say)

Mississippi R. P. Colmer (March 21): The twig girdler is scarce on pecan in eastern Jackson County.

CITRUS

GREEN CITRUS APHID (Aphis spiraecola Patch)

Florida J. R. Watson (March 21): The green citrus aphid is doing serious damage only on the lower east coast -- Broward County, especially at Davis. A few trees as far north as Polk County (Lake Alfred) are heavily infested and a few aphids are seen as far north as northern Marion County (Citra). But it now seems certain that (except perhaps on tangerines) the damage will be light this year.

COWPEA APHID (Aphis medicaginis Koch)

Arizona C. D. Lebert (March 23): A. medicaginis Koch is moderately abundant on citrus in the Salt River Valley and around Phoenix.

RASPBERRY AND BLACKBERRY

A TREE CRICKET (Oecanthus sp.)

Indiana J. J. Davis (March 28): Egg punctures of a tree cricket are abundant in raspberry canes at Van Buren.

North Dakota J. A. Munro (March 20): A considerable amount of tree cricket (probably the striped tree cricket) injury to raspberry canes and shrubs has been reported of late from Hankinson. Twigs sent in for inspection were badly punctured and contained large numbers of eggs.

RASPBERRY BUD MITE (Erionhyes gracilis Hal.)

Washington

Wm. W. Baker (March): Mites were found on every thimbleberry bush, Rubus parviflorus Nutt. and examined from several localities in Pierce and King Counties; some of these were miles from any known cultivated berries. In the case of the thimbleberry the mites were practically all located on the inside of the buds and at the junction of healthy and injured tissue, making it appear very much as though the mites were responsible for the injury. Not a single field examined from several places around Sumner, Puyallup, Orting, Tacoma and Bellevue were free from the mite. In some cases there was a little evidence of injury but this was rare.

GRAPE

AN ERIOPHYID MITE (Erionhyes vitis Landois)

Washington

Wm. W. Baker (March 26): Grapes in two different vineyards at Bellevue have eriophyids, probably Erionhyes vitis Landois, as they cause the same wooly appearance of the underside of the leaves as is mentioned for this species.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Indiana

J. J. Davis (March 28): Cottony maple scale reported abundant at Hartford City and Noblesville. At the latter place grapes were reported heavily infested.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)  
scale

New Jersey

Thos. J. Headlee (March 5): The oyster-shell scale is not, I think, so vigorous as it has been in years past.

Ohio

E. W. Mendenhall (March 24): The oyster-shell scale is moderately abundant.

J. S. Houser (March 24): The oyster-shell scale is moderately abundant.

Indiana

J. J. Davis (March 28): Oyster-shell scale (L. ulmi L.) abundant on apple at Wolcottsville.

Kansas

H. R. Bryson (March 20): The oyster-shell scale is reported as being scarce.

Missouri

L. Haseman (March 23): The oyster-shell scale is scarce in Missouri.

- Nebraska M. H. Swenk (March 20): The lilac form of the oyster-shell scale is very abundant in some parts of northeastern Nebraska.
- Colorado C. P. Gillette (March 6): I am not sure that I noted in any of my reports last year that the oyster-shell scale, which was becoming so abundant on our ash, willow, and cottonwood trees, in northern Colorado, and on the purple lilac, was almost exterminated during the winter of 1929-30 by the severe cold weather -- the temperature here at Fort Collins going as low as 38.5 degrees below zero. We were only able to find occasional live specimens of the scale in this vicinity last summer.

PURPLE SCALE (Leridosaphes beckii Newm.)

- Florida J. R. Watson (March 21): The purple scale is moderately abundant. Crawlers are beginning to emerge in Polk County and south.

COTTONY CUSHION SCALE (Icerya purchasi Mask.)

- Arizona C. D. Lebert (March 23): The cottony cushion scale is again appearing in small, scattered infestations in the Salt River valley. In most cases the infestations are slight, especially in the citrus, although one rather serious infestation was found on grapefruit in Tempe. This infestation was attributed to a nearby infestation on Pittosporum tobira which had been reported too late to control by means of establishing the prodacious ladybeetle, Vedalia cardinalis. In every case where the beetles were established last year a nearly complete control was secured.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

- Mississippi R. W. Harned and assistants (March): Reports from the southeastern part of the State indicate that the citrus whitefly is moderately abundant.
- Florida J. R. Watson (March 21): The citrus whitefly is moderately abundant and is passing into the pupal stage.

ORANGE THRIPS (Scirtothrips citri Moulton)

- Arizona C. D. Lebert (March 23): The citrus thrips reported quite numerous at Yuma.

FLOWER THRIPS (Frankliniella tritici Fitch)

- Arizona C. D. Lebert (March 23): The wheat or flower thrips are quite abundant on citrus and flowers in the Salt River Valley.



TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Florida M. M. High (March 24): We have recently found the vegetable weevil in the following new counties in Florida: Jackson, Okaloosa, Gadsden, and Santa Rosa.

Mississippi R. W. Harned (March): Larvae of the vegetable weevil have caused much damage and attracted much attention in cabbage and turnip fields in the southern half of the State. Specimens have recently been received from the vicinities of McCarley, Foxworth, Woodville, Phoenix, Laurel, and Neshoba.

Alabama J. M. Robinson (March 24): Larvae of the vegetable weevil emerged from material sent in from Andalusia.

Texas M. M. High (March 24): We have recently found the vegetable weevil in the following counties: Orange, Jefferson, Hardin, and Chambers.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror L.)

Oregon Insect Pest Rept. Ore. Agr. Coll. & Exp. Station (February 2): Mr. T. R. Chamberlin reports that they began leaving caches near Forest Grove by January 25, practically one month earlier than in 1930. Beetles have not been found plentifully in the fields, however, since the last of January and early February. In spite of early issuances, egg development seems later than at this time last year. (March 23): Mr. Thompson reports 5 or 6 specimens to the square foot taken in Austrian winter pea field at Corvallis. The insects were feeding but as yet no apparent economic damage appeared. Mr. Thompson reports all specimens were females and heavy with eggs.

HOP FLEA BEETLE (Psylliodes punctulata Melsh.)

Utah G. F. Knowlton (March 11): The hop flea beetle is active at the present time in northern Utah, feeding on weeds during the warm part of the day.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Florida J. R. Watson (March 21): The seed corn maggot was destroying cucumber plants at Bushnell, February 18.

Texas F. L. Thomas (March 16): The seed corn maggot was found in moderate abundance in corn at Romney, Eastland County, where considerable damage was being done. The corn seed had been in the soil about 10 days.

APHIDS (Aphidae)

Virginia G. E. Gould (March 24): The spinach aphid, Myzus persicae Sulz., is abundant upon all spinach in the Norfolk area. The number present at this time is much greater than this time last year.

South Carolina A. Lutken (March 7): A heavy infestation of aphids on broccoli, mustard, and turnips in Beaufort County (March 5, 1931).

Mississippi R. W. Harned and assistants (March): Many complaints have been received from all sections of the State during the past few weeks in regard to aphid infestations of various kinds of plants. In only a few cases have these complaints been accompanied by specimens. However, specimens have been received and identified as follows by Mr. A. L. Hamner:

Aphis pomi on spiraea from Biloxi, March 6.

Rhopalosiphum pseudobrassicae on cabbage from Lucedale, February 23.

G. L. Bond (March 21): Plant lice observed on spinach, injury slight, from Smith, Jasper, Covington, Jones and Wayne Counties.

Utah G. F. Knowlton (March 26): Myzus persicae Sulz. has been a nuisance on sprouting potatoes used for experimental purposes at Logan on several occasions during the past two seasons.

TARNISHED PLANT BUG (Lygus pratensis L.)

Utah G. F. Knowlton (March 11): Tarnished plant bugs are active at the present time, on warm days, in Boxelder and Cache Counties.

CIANGA (Scapteriscus vicinus Scudd.)

Florida J. R. Watson (March 21): The West Indian mole cricket is doing much damage to golf greens at Belleair and other places.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perdy)

Mississippi H. Dietrich (March 21): The mole cricket is again becoming abundant in gardens at Lucedale.

SLUGS (Mollusca)

South Carolina A. Lutken (March 7): Slugs are damaging tobacco seedlings in Georgetown County.

### PILLBUGS (Oniscidae)

Mississippi R. W. Harned and assistants (March): A correspondent at Laurel sent to this office on March 9 some pillbugs with the following comment: "They simply eat everything we plant and curl themselves around rose stems and suck the life out of them."

R. P. Colmer (March 21): Pillbugs have been moderately abundant in gardens in the vicinity of Pascagoula. Especially bad on young flower plants.

### POTATO

#### COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Mississippi K. L. Cockerham (March 21): The first Colorado potato beetle of the 1931 season was found on Irish potato on March 21 and the second on March 22, at Biloxi.

Texas F. L. Thomas (March 21): The first specimen of the Colorado potato beetle was observed this season at College Station today.

Wyoming C. L. Corkins (March 19): The Colorado potato beetle is scarce.

### CABBAGE

#### IMPORTED CABBAGE WORM (Pieris rapae L.)

Missouri L. Haseman (March 23): An occasional butterfly has been seen on the wing at Columbia on warm days.

Mississippi K. L. Cockerham (March 22): The first imported cabbage worm was seen on March 22, attacking cabbage at Biloxi.

H. Dietrich (March 21): Adults were seen flying over cabbage fields at Lucedale and Richton on warm days during March.

Kansas H. R. Bryson (March 20): The imported cabbage worm is reported as moderately abundant.

#### DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Mississippi H. Dietrich (March 21): The diamond-back moth is very abundant on cabbage at Lucedale but very few moths are emerging, owing to parasitism.



CABBAGE APHID (Brevicoryne brassicae L.)

- Virginia G. E. Gould (March 24): The cabbage aphid survived the winter in large numbers upon many crucifers and especially kale. Growers near Norfolk will have to harvest their crop soon in order to escape damage.
- South Carolina P. K. Harrison (March 12): Cabbage aphids were collected on cabbage and collards, February 5, in two home gardens at Fairfax. All plants were infested and some were severely damaged.

HARLEQUIN BUG (Murgantia histrionica Hahn)

- Florida J. R. Watson (March 21): There have been no complaints yet of the harlequin bug.
- Alabama J. M. Robinson (March 24): The harlequin bug has not been found yet.
- Texas F. L. Thomas (March 20): J. N. Roney, entomologist of the plant lice laboratory, reports that the harlequin cabbage bug has been seen quite frequently on collards and greens since the 15th of February at Dickinson, Galveston County.

MELONSSPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

## Correction:-

The note on Diabrotica vittata Fab. by F. L. Thomas in Texas appearing in the Insect Pest Survey Bulletin, March 1, 1931, P - 24, referred to D. duodecimpunctata.

- Georgia O. I. Snapp (March 13): The first adults to appear from hibernation at Fort Valley were observed on peach trees today. The cool weather is keeping them in hibernation later than usual.
- Florida J. R. Watson (March 21): The spotted cucumber beetle is moderately abundant at Gainesville.
- Georgia J. B. Gill (March 27): The spotted cucumber beetle has been observed to occur on peach and plum blossoms at Albany.
- Alabama J. M. Robinson (March 24): The spotted cucumber beetle is moderately abundant on legumes and garden vegetables at Auburn.
- Mississippi R. W. Harned and assistants (March): The spotted cucumber beetle has been reported in moderate abundance from the southeastern part of the State.

Kansas H. R. Bryson (March 20): The spotted cucumber beetle has not been taken this year at Manhattan at the present writing.

New Mexico J. R. Eyer (March 6): The earliest recorded appearance of the spotted cucumber beetle for the year is March 2. Since this insect is more or less active all winter long, however, it is possible that adults were in the fields on warm days previous to this date.

Arizona C. D. Lebert (March 23): One adult was taken in sweeping in wheat field, Mesa, on March 22.

#### STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Florida J. R. Watson (March 21): The striped cucumber beetle is very abundant in the Everglades only.

Indiana J. J. Davis (March 3): Mr. Riley observed striped cucumber beetles active in outdoor hibernation cages, February 23.

Missouri L. Haseman (March 23): The striped cucumber beetle is not yet moving.

Mississippi R. W. Harned and assistants (March): The striped cucumber beetle is very abundant.

#### STRAWBERRY

##### STRAWBERRY PAMERA (Orthaea vineta Say)

Florida J. R. Watson (March 21): The strawberry pamera was sent in from Lakeland in early March, at which time it was doing considerable damage. This is early for this insect.

##### STRAWBERRY ROOT WEEVILS (Brachyrhinus spp.)

Oregon Insect Pest Report, Ore. Agr. Coll. and Exp. Sta. (March): Strawberry root weevils are moderately abundant in Columbia and Multnomah Counties.

##### STRAWBERRY CROWN BORER (Tyloclerma fragariae Riley)

Oregon Insect Pest Report, Ore. Agr. Coll. and Exp. Sta. (March): The strawberry crown moth is very abundant in Benton and Columbia Counties.

##### A CASE-BEARER (Coleophora sp.)

Washington Wm. W. Baker (March 13 and 26): Cases of Coleophora sp. were found on strawberries at Bellevue and Puyallup; apparently these were nearly full grown though no cases were found later.

TURNIPS

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Mississippi

G. I. Worthington (March 21): Aphids are general on turnips in Coahoma, Bolivar, Sunflower, and Washington Counties.

H. Dietrich (March 21): Aphids, R. pseudobrassicae, are very abundant on cabbage at Lucedale, George County.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Florida

J. R. Watson (March 21): The onion thrips are much in evidence about Gainesville.

ONION MAGGOT (Hylemyia antiqua Meig.)

Alabama

J. M. Robinson (March 24): General complaint has been made of the onion maggot around Montgomery.

CARROTS

CARROT RUST FLY (Psila rosae Fab.)

Ohio

J. S. Houser (March 24): Carrots in storage, sent from Canton, show severe damage by the carrot rust fly. The grower reports that this is the second year in which he has noted injury.

EGGPLANT

EGGPLANT LEAF MINER (Phthorimaea glochinella Zell.)

Georgia

T. O'Neill (February 2): The eggplant leaf miner, P. glochinella, has been noted in Solanum at Atlanta.

BEETS

BEEF LEAFHOPPER (Eutettix tenellus Baker)

Wyoming

C. L. Corkins (March 19): The beet leafhopper is scarce.

Idaho

C. Wakeland (February 24): Climatic conditions have been very favorable for survival. At this date overwintering adults are abundant in breeding areas and active during periods



of favorable temperatures. (March 23): The beet leafhopper is very abundant. Winter mortality is very light. Conditions at this time are unfavorable to production of beets profitably in the Lewis Falls area.

Utah

G. F. Knowlton (March 23): A few overwintering adults have been collected in the Tooele and Boxelder County breeding grounds.

## FOREST AND SHADE-TREE INSECTS

### GYPSY MOTH (Porthetria dispar L.)

Vermont

H. L. Bailey (March 25): Egg masses of the gypsy moth have been found in moderate abundance by scouts of the Vermont Department of Agriculture in Springfield, Rockingham, and towns south to the Massachusetts line. Observations in other sections point to scarcity or complete absence.

### BROWN-TAIL MOTH (Nygmia phaeorrhoea Don.)

Vermont

H. L. Bailey (March 25): Inspections in sections of the State most liable to reinfestation fail to reveal the presence of any winter webs. The insect has not been found in the State for several consecutive years, though reinfestation has been expected owing to spread in eastern New England.

### EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Pennsylvania

T. L. Guyton (March 13): Rhyacionia buoliana Schiff. was collected in 1930 by G. B. Slesman and H. J. Fisher, nursery inspectors of the Bureau of Plant Industry, at the Pennsylvania Railroad Nurseries, Morrisville, and on Cheltenham Road, Chestnut Hill. Mr. Slesman notes that the Pennsylvania Railroad Nurseries have a heavy infestation occurring among Scotch pine, but that the infestation at Chestnut Hill is of minor importance.

### TENT CATERPILLAR (Malacosoma californica Pack.)

Arizona

C. D. Lebert (March 23): The California tent caterpillar is extremely prevalent this spring. Defoliation of cottonwoods around Phoenix is severe. Severe injury to apricot foliage is reported in one instance.

### BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fallen)

New York

R. D. Glasgow (February 28): I think you will be interested to know that we found the European birch leaf-mining sawfly, Phyllotoma nemorata Fallen, to be abundant in Essex County last fall. Apparently this insect is now well established in the northeastern part of this State.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Indiana

J. J. Davis (March 28): This flat-headed borer was reported February 22 as occurring on Norway maple at Frankfort.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena ~~St~~Frank)

Oregon

Insect Pest Rept. Ore. Agr. Coll. and Exp. Sta. (March):  
The elm leaf beetle is very abundant near Lexington, Morrow County.

FIR

DOUGLAS-FIR CATERPILLAR (Euschausia argentata Packard)

Oregon

D. C. Mote (March 23): Douglas-fir webworm, Halisidota argentata Packard - A colony of Douglas-fir webworms was received from the State Board of Horticulture, Portland, March 21. Larvae were feeding on the fir needles and were about 1/2 inch long.

MAPLE

MAPLE BORER (Synanthedon acerni Clem.)

Ohio

E. W. Mendenhall (March 28): The soft and hard maple trees on the campus of Wilberforce University are affected with the maple borer.

OAK

A LEAF MINER (Cameraria conglomeratella Zell.)

Mississippi

R. W. Harned (March): Oak leaves containing mines probably made by Cameraria conglomeratella were received from Laurel on March 11 and March 14. A rather serious infestation of this leaf miner existed at Laurel during the past summer and fall.

A CYNIPID GALL (Callirhytis aquaticae Ashm.)

Mississippi

R. W. Harned (March): Water oak twigs containing galls probably caused by Callirhytis aquaticae were received from Meridian, on February 21.

PINE

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Indiana

J. J. Davis (March 28): Pine leaf scale (Chionaspis pinifoliae) was reported very abundant on Colorado blue spruce at Madison, February 18.

INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

SCALE INSECTS (Coccidae)

Mississippi

R. W. Harned and assistants (March): Aspidiotus cyanophylli Sign. was found on palm, Coccus hesperidum L. on oleander, Pinaspis aspidistrae Sign. on fern, and Phenacoccus gossypii Towns. & Ckll. on Hibiscus, on a property in Corinth on March 4.

COTTONY CUSHION SCALE (Icerya purchasi Mask.)

Mississippi

R. W. Harned and assistants (March): An infestation was found on tung oil plants at Gulfport, on March 5. This insect is doing considerable injury to Pittosporum in Hattiesburg.

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum Westw.)

Indiana

J. J. Davis (March 28): This whitefly was reported destructive to Lantana at Indianapolis, February 5.

AN APHID (Myzus sp.)

Mississippi

J. P. Kislanko (March): The upper leaves and the flowers of Bougainvillea sp. are heavily infested with aphids, Myzus sp., in a greenhouse in Hattiesburg.

A COREID BUG (Jadera haematoloma H. S.)

Florida

H. T. Fernald (March 19): Nymphs and adults are sucking the juices from the blossoms of a very common species of Bidens which grows everywhere around Orlando. Captured February 7, (This species has been recorded as a cotton pest. J. A. H.)

A SWALLOWTAIL (Papilio ajax, parcellus Cram.)

South Carolina

A. Lutken (March 25): Specimen of the zebra swallowtail were taken at Clemson College, March 19.



GREENHOUSE CENTIPEDE (Scutigera immaculata Newp.)

Indiana

J. J. Davis (March 28): The greenhouse centipede was reported as badly infesting a greenhouse at Shelbyville January 19. The crop is not reported but supposedly it was the lettuce crop.

ARBORVITAE

AN APHID (Dilachnus thujaefolia Theob.)

Mississippi

R. W. Harned and assistants (March): This insect has been found unusually abundant on arborvitae in many parts of the State.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Hopk.)

Mississippi

R. W. Harned (March): Injured twigs of Cedrus deodara were received from Ackerman on February 23.

CHRYSANTHEMUM

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Mississippi

J. Milton (March 24): A heavy infestation of the gall midge was found on chrysanthemums at Corinth in February. The plants were destroyed.

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Mississippi

O. M. Chance (March 21): A few chrysanthemum aphids have been noted in Hinds and Rankin Counties.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Virginia

G. E. Gould (March 24): The euonymus scale is very abundant around Norfolk. Practically all euonymus bushes that are two or three feet tall are infested and are severely injured every year.

NARCISSUS

NARCISSUS BULB FLY (Merodon equestris Fab.)

New York

R. D. Glasgow (February 28): The narcissus fly, generally, has been of minor importance in New York, during the past year, but there is one small commercial planting in the lower Hudson River Valley that is heavily infested by bulb flies of the genus Merodon.

LESSER BULB FLIES (Eumerus spp.)

New York

R. D. Glasgow (February 28): In our studies of bulb pests, the lesser bulb flies were not very seriously troublesome last year, and probably will not be especially important this spring unless it may be in private plantings.

ROSE

ROSE APHID (Macrosiphum rosae L.)

Mississippi

R. W. Harned and assistants (March): Rose aphids are very abundant at Natchez and moderately abundant on roses and bridal wreath in Jackson County.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

BEDBUG (Cimex lectularius L.)

West Virginia

L. M. Peairs (March 24): An unusual outbreak of bedbugs from an undetermined source has occurred in the rat and rabbit breeding cages in the Department of Zoology at Morgantown. The insects were apparently feeding and thriving on these animal hosts.

BOXELDER BUG (Leptocoris trivittatus Say)

Iowa

C. J. Drake (March 25): The boxelder bug is very common throughout the State this spring and causing considerable annoyance in homes. Specimens have been received from Des Moines, Cedar Rapids, Waterloo, Ames, Orient, Dubuque, Clarinda, Ft. Dodge, Manning and Battle Creek.

H. E. Jaques (March 23): Boxelder bugs are very abundant, and the most annoying in years, at Lyons, Harrison, and Pocahontas Counties.

Missouri

L. Haseman (March 22): Boxelder bugs are observed on warm days. This insect is attracting more than usual attention.

Colorado

C. P. Gillette (March 6): The weather was warm enough during the latter part of February to attract this insect from its hibernating quarters and permit it to collect on the walls of buildings in northern Colorado. A few letters have been received making inquiry as to what can be done to control the pest.

Utah

G. K. Knowlton (March 23): The boxelder bug has only become annoying in northern Utah during the past two or three weeks. Previous to this time the continued cold weather prevented their becoming much of a household nuisance.

A MITE (Bryobia sp.)

Colorado

C. P. Gillette (March 6): Complaints are beginning to come from housewives because of the presence of the mite (Bryobia sp.) on the windows and walls of homes. Such complaints are quite common nearly every year beginning about the first of March and continuing until the mites have all escaped from the houses.

CATTLE

OX WARBLER (Hypoderma spp.)

Iowa

H. E. Jaques (March 23): Several counties report more ox warbles than usual. A. J. Secor of Van Buren County writes, "We have conducted an ox warble campaign, and had excellent results. We have record of unusual gain in club calves by removal of warbles."

Bryson

Kansas

H. R. Bryson (March 21): Dr. E. G. Kelly reports the heel flies out laying eggs March 12 in Greeley County. Similar observations were made March 15 in Ottawa County, March 16 in Rawlins County, and March 18 in Finney County. These are unusually early dates for these flies to be active in Kansas.



# HOUSEHOLD AND STORED-PRODUCTS

## INSECTS

### TERMITES (Reticulitermes spp.)

- West Virginia L. M. Peairs (March 24): Several flights of adults have been reported during the past week at Morgantown.
- So. Carolina A. Lutken (March 7): Reproductive forms of subterranean termites have been emerging in heated buildings since February 25 in Columbia and vicinity.
- Indiana J. J. Davis (March 28): Many reports have been received of termite infestations. Reports come from Anderson, Richmond, Indianapolis, Petersburg, Plymouth, Perus, South Bend, Shelbyville, and Lafayette. During the past week several lots of winged forms have been received with the information that they are emerging. This is a very early date for migration.
- Illinois W. P. Flint (March 19): Termite infestations are perhaps no more numerous than usual, but more complaints of this insect have been received.
- Kansas H. R. Bryson (March 20): Termites are moderately abundant over the entire State. The first record at Manhattan of termites swarming was made by Dr. R. L. Parker on February 27.
- Missouri L. Haseman (March 23): We are getting an unusually large number of early complaints regarding termites, particularly in the floors and other timbers of dwellings.
- Mississippi R. W. Harned and assistants (March): Termites are causing some trouble in wooden buildings, destroying foundation timbers. The winged forms have been flying for a week.
- Alabama J. M. Robinson (March 24): Termites were swarming at Talladega, March 6. They were also observed at Montgomery.

### ANTS (Fermicidae)

- Georgia M. R. Smith (March): Specimens of Solenopsis littoralis Creighton, collected by M. S. Yeomans from a greenhouse at Fort Valley, were submitted to me for identification by Mr. Tom O'Neill of the Georgia State Board of Entomology. The species heretofore has been known only from localities along the Gulf coast of Mississippi and Alabama. That the ants are highly granivorous is indicated by a number of observations previously made on them.

Mississippi

M. R. Smith (March): D. W. Gaines found a new infestation of Iridomyrmex humilis Mayr. near Hoffman, Holmes County, on March 20. W. L. Gray found workers of Camponotus caryac subsp. discolor Emery feeding on sugar in a house at Natchez. This is the first time that the species has ever been recorded as a house pest for this State. Solenopsis xyloni McCook appeared above the surface of the soil during warm days in February.

M. D. Peets (March 21): Argentine ants are causing annoyance in places infested and which were not poisoned during the past year.

SILVERFISH (Lebisma saccharina L.)

West Virginia

L. M. Peairs (March 24): Fish moths, L. saccharina, numerous in the breeding room of the Zoology Department at the West Virginia University, Morgantown. This is a basement room with an opening into the steam tunnel, and this seems to furnish warm conditions which attract and maintain, with the animal food, bran, and other starchy mixtures, conditions favorable for great numbers of the fish moths.

YELLOW MEAL WORM (Tenebrio molitor L.)

Wyoming

J. M. Robinson (March 24): The yellow meal worm was associated with a shipment of potatoes from Wyoming, found at Salitpa, Alabama.

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon

D. C. Mote (March 25): Mr. Dimick reports the males have left hibernating quarters and are above ground. They have been observed for several weeks.

(A note which arrived too late to be placed in its correct order)

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

T. E. Holloway (March 30): Pupae of the sugarcane borer have been found several times during the winter by E. K. Bynum, stationed at Houma. The borer hibernates in the larval stage, but the extremely mild weather of the winter apparently forced pupation. No adults emerged from these winter pupae up to March 28, when two emerged from pupae collected on March 12. This is about a month ahead of the usual season.

Notes abstracted from "News Letter, Plant Quarantine and Control Administration, "January, February, and March, 1931.

(Not for publication)

ORANGE MAGGOT (Anastrepha ludens Loew)

On November 4, one adult was caught in a trap in Matamoros, Mexico, just across the river from Brownsville, Tex. About 100 traps, baited with orange extract, are kept in the citrus trees growing in the patios in Matamoros. Inspection of the imported fruit in the public markets resulted in the finding of 48 larvae.

December, 1930, was the first complete month in which no adult flies have been collected since the infestation at Matamoros was found in September, 1929.

During February 32 larvae were taken from oranges offered for sale in the market at Matamoros. These oranges originated at Montemorelos, Nuevo Leon, which is located about 100 miles below the border. Fruit imported to the market at Matamoros from the southern part of the Republic of Mexico showed a heavier infestation in February than at any time since September, 1930. A total of 241 larvae were taken from fruits which were discarded by the merchants. Many of the infested fruits are sold before evidence of injury becomes apparent.

This insect was found near Monterey, Nuevo Leon, Mexico, in pistachio nuts (Pistacia vera). This represents our first record of the infestation of pistachio nuts.

PARLATORIA DATE SCALE (Parlatoria blanchardi Targ.)

Considerable intensive inspection was carried on in all areas and seven infested palms were found--five in the southern part of the Imperial Valley, two in the Coachella Valley, and none in Arizona. A survey of the northern part of the Imperial Valley was completed during March and no scale found. No scale has ever been reported from this area.

During the past calendar year fewer infested palms were reported in the Coachella Valley than during any year since the work was inaugurated in 1914.

During the past four months 3,109 fan palms were inspected in areas in the Coachella Valley where date palms heavily infested have been found in the past five years. Forty-five palms were found lightly infested, and these all within 300 feet of a rather heavily infested date palm.

A new infestation of 20 palms in the Imperial Valley was found during January. This planting consisted of 29 seedling palms about 16 feet high. One leaf on one of the palms was very badly infested. The infestations on the other 19 palms were light.



PINK BOLL WORM (Pectinophora gossypiella Saund.)

Infestations have been found in the crop of 1930 in the following counties; Graham, Pinal, Maricopa, and Pima, in Arizona; Chaves, Eddy, Otero, Dona Ana, and Luna, in Mexico; Presidio, Brewster, Reeves, Ward, Hudspeth, El Paso, Andrews, Ector, and Midland, in Texas.

The infestations in Andrews and Ector Counties were found by field inspections, the others having been found by the use of the gin trash machines. Specimens were also found, with the machine, in trash from all seven gins in the Juarez Valley, in Mexico, which is just across the Rio Grande opposite the El Paso Valley.

The infestation in the Salt River Valley of Arizona is now known to exist in the following general localities; South and southwest of Tempe, south and east of Chandler, the vicinity of Coolidge, and Jehi section, near Laveen, near Glendale, and a few miles west of Avondale, which is about 25 miles west of Phoenix. These infestations are so light that it is only with great difficulty that specimens can be found by field inspection.

GYPSY MOTH (Portthetria dispar L.)

Approximately 25 of the most experienced and expert employees of the Scouting and Extermination project have been making an intensive examination of the tree growth in Dukes Park, Somerville, N. J., where the gypsy moth was discovered in 1920. Much of the growth examined consists of Koster blue spruce trees, many of which are of large size. No infestation has been found this year in the area examined in Dukes Park up to January, 1931.

A report was received in December from the New York Conservation Department stating that approximately 85 egg clusters had been found up to December 23, 1930, at 19 points in the vicinity of Roslyn, L. I., where a large isolated infestation of the insect was discovered early last year. Intensive scouting operations are being continued by the State in the vicinity of this infestation.

INSECT CONDITIONS IN PORTO RICO DURING JANUARY AND FEBRUARY, 1931.

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico.

Beginning last December a general infestation of the yellow cane aphid (Sipha flava Forbes) has been building up in the western end of the island. Continued dry weather, and in some sugarcane fields a considerable percentage of parasitism of the larvae of the predacious coccinellid Cycloneda sanguinea L. by a chalcid resulted finally in considerable damage to young ratoon and plant cane. The principal area involved includes, from northwest to southwest, the towns of Isabela, Moca, Aguada, Rincon, Anasco, Mayaguez, Hormigueros, San German, Cabo Rojo, Lajas, and Guanica. Several local representatives of the Department of Agriculture told me that this has been the worst infestation for several years; not only Japanese cane but also P. O. J. 28-78 have been affected.

Sugarcane mealybugs (Pseudococcus spp.) are present in moderate numbers in several sugarcane fields examined near Arecibo and Barceloneta during the latter part of February. The agricultural agent at Mayaguez has reported that mealybugs have been present in that general section since the first of the year in moderate numbers, which is normal.

The agricultural agent at Mayaguez reported that during February a planting of about 500 acres of sugarcane near Hormigueros was found at cutting time to have about 90 per cent infestation of the sugarcane borer (Diatraea saccharalis Fab.) and that the sucrose content was considerably reduced.

The field manager of a large sugar central near Agudilla told me recently that white grubs (Phyllophaga spp.) had been considerably reduced during this past season largely owing, he felt, to the introduction two years ago of a number of toads (Bufo marinus) which had increased rapidly.

Mr. Hein reports that he had found a few papaya fruits infested by the papaya fruit fly (Toxotrypana curvicauda Gerst.) in and near Laras several times during January and February.

A light infestation of beans at the Experiment Station by Heliothis obsoleta Fab. was reported in February. Less than 1 per cent of the pods in about 1 acre was injured. (A. S. Mills.)

One larva of Maruca testulalis Geyer was found at Rio Piedras in a pod (Crotalaria sp.). A light infestation of larvae in blossom buds and pods of lima beans occurred at Rio Piedras and also a light infestation in pods of string beans and pods of pigeon peas. (A. S. Mills.)

Larvae of Phlyctaenia rubigalis Guen. did considerable damage to the leaves of both lima and string beans at Rio Piedras. (A. S. Mills.)

The bean lacebug (Corythucha gossypii Fab.) is present in nearly all string and lima beans examined, in much smaller number than during the past summer months. (A. S. Mills.)

A leafhopper (Empoasca sp.) is abundant and injurious in both lima and string bean fields at Rio Piedras. (A. S. Mills.)

Larvae of Utetheisa ornatix L. are abundant in bean pods at Rio Piedras. (A. S. Mills.)

Diaprepes spengleri L. is found eating the leaves of string beans at Isabella. (A. S. Mills.)

Eggplant fields at Rio Piedras, Dorado, Humacao and several other places on the island were infested by the eggplant lacebug (Corythaica monacha Stal). In several fields the insect was very abundant and causing much of the leaf surface to turn white. (A. S. Mills.)

Myzus persicae Sulz. is present on eggplant in small numbers in Rio Piedras, Dorado, Humacao, and several other places on the island.

Epitrix cucumeris Harr. was moderately abundant on about one-half acre of eggplants at the Experiment Station at Rio Piedras late in February.

About 50 acres of onions in some patches which had not been sprayed near Arecibo were examined on February 18 and found to be badly infested by the onion thrips (Thrips tabaci Lind.).

The melon worm (Diaphania hyalinata L.) is moderately abundant at Manati in squash and cucumber and in cucumbers at Arecibo. (A. S. Mills.)

About 20 per cent of the tomato fruits of a small garden near Rio Piedras were being punctured by Mezara viridula L. (A. S. Mills.)

About 50 per cent of the fruits of tomato in a small garden near Rio Piedras were being punctured by Phthia picta Drury, all stages being present. (A. S. Mills.)

About one-half acre of cabbage near Rio Piedras was considerably infested by the diamond-back moth (Plutella maculipennis Curtis). Most of the leaves had feeding holes. A very bad infestation was also observed on a small patch of cabbage at the Experiment Station late in February, some plants being totally destroyed. (Leonard and Mills.)

A light infestation of the corn ear worm (Heliothis obsoleta Fab.) has been observed at Rio Piedras on pepper and a moderate infestation at Rio Piedras and Arecibo on tomatoes. (A. S. Mills.)

A light infestation of a stink-bug (Arvelius albopunctatus DeG.) on pepper has been observed at Corozal. (A. S. Mills.)

The last of February two cotton fields at Comao near the south coast were quite badly infested by the cotton leaf worm (Alabama argillacea Hbn.). The insect was very injurious from about the middle of December, 1930,



throughout January in the Villalba section comprising about 1,000 acres of cotton and also at the same time around Coamo; a bad infestation also occurred during January at Guayanilla on the south coast and late in January at Carolina (comprising about 300 acres) on the north coast east of San Juan, which has the same planting date as has the south-coast crop. It is believed from continued close personal observation that the leaf worm was present in injurious numbers somewhere in either the north or south coast (there is no cotton grown elsewhere) during every month in the year 1930. Continued close observation on this point may throw some light upon the origin of the well-known periodicity of outbreaks of this insect. (Mr. Rorke.)

The whole south coast, comprising 10,000 acres, is generally infested with the pink boll worm (Pectinophora gossypiella Saund.). Infested bolls were first noticed at the start of picking in late December or early January and the number has steadily increased. The situation is very much worse than it was last year or during any previous year. Late in February a  $3\frac{1}{2}$ -acre field near Ponce was found to have 95 per cent infested bolls. About one-third of the crop in the south coast was picked by February 28. The crop in the north coast (west of San Juan) is still composed only of young plants. (Mr. Rorke.)

A cotton stainer (Dysdercus andreae L.) was more abundant than usual in cotton on the south coast during February and possibly part of January. (Mr. Rorke.)

A blister mite (Eriophyes gossypii Banks) was common in one cotton field of several acres at Guayanilla during February. (Mr. Rorke.)

A leaf miner (Nepticula gossypii Forb.) was fairly common on cotton at both Coamo and Guayanilla during February. (Mr. Rorke.)

INSECT CONDITIONS IN MEXICO UP TO MARCH 9, 1931.

A. H. Amis and A. W. Morrill.

Cutworms (Noctuidae) have done little or no damage during the present season. These insects usually cause considerable damage to the first setting of the tomato crop.

A flea hopper, Halticus bracteatus Say, has been practically absent during the present season, as has been the case since its unexplained decline in numbers during the vegetable season of 1926-27. For a period of two or three years ending with the calendar year 1926 this insect caused extensive damage to tomatoes in the State of Sinaloa, but during the last years has rarely been found in tomato fields and only occasionally in seed beds during the fall months.

A leaf folder (Phthorimaea lycopersicella Busck) was at first quite severe in the tomato seed beds and early plantings in the fall of 1930, but up to the present time (March 9) has been doing little or no damage to the fruit. It is invariably present in injurious numbers during the latter part of March and through April and May and damage is therefore anticipated.

A stalk borer (Trichobaris sp.) has been rather serious on tomato plants in the river sections in Sinaloa. This is the first observation of noticeable damage from this insect during the past eight years of observations. The cocklebur is an alternate host plant.

The potato aphid (Macrosiphum solanifolii Ashm.) has been unusually prevalent and has done considerable damage to bell peppers this season in the State of Sinaloa.

The pea aphid (Illinoia vici Kalt.) has been unusually abundant on the entire west coast of Mexico where peas were planted, especially in the Fuerte and Yaqui Valleys.

The corn ear worm (Heliothis obsoleta Fab.) has been responsible for only a small percentage of loss of corn this season.

The last cotton crop on the Mexican west coast was seriously affected by a mirid bug. Presumably the Mexican species is the same as that identified by Dr. Knight in 1928 as Creontiades scibilis Van D. which attacks the squares in a manner similar to the attack of Lygus elisus Van D. in Arizona and California.

INSECT CONDITIONS IN GUATEMALA DURING JANUARY AND FEBRUARY, 1931

Marston Bates

12 Calle Oriente No. 1, Guatemala.

Aphids (Aphidae) are among the most injurious insects of agriculture and we have many injurious species in Guatemala.

Aphis asclepiadis Fitch is very common in the region of Tela, Honduras, on the flowers of Asclepias sp.

Aphis gossipii Glov. is one of the most destructive aphids in the United States. In Lancetilla, Honduras, it has been found on Annona sp. and Hibiscus sp. In the region of Antigua, Guatemala, it has been attacking the avocado (Persea americana) and the loquat (Eriobotrya japonica). A very heavy infestation of this aphid on watermelon was found in the vicinity of Amatitlan. Two species of syrphidae were common predators, and may serve to check the outbreak.

Brevicoryne brassicae L. is the common aphid of white cabbage. It has been found at Tumbador and San Marcos.

Macrosiphum luteum Buckt. was found in an orchid in Tumbador.

Two species of Myzaphis attack roses in Colomba and Tumbador.

Myzus persicae Sulz. has been found on oranges at Guatemala.

Toxoptera aurantiae Boyer is the common citrus aphid in Guatemala. It has also been found attacking cacao and coffee in Zacapa, Colomba, Antigua, Retalhuleu, and Guatemala.

Neotoxoptera sp. was found injuring frijol (Dolichos sp.) at Chimaltenango.

Severe injury to potatoes by wireworms (Elateridae) was reported from Tecpan.

Cerataphis lataniae Boisd. is an aphid that attacks the young palms in tropical America. In Lancetilla, Honduras, it attacks the palm Ptychosperma sp.

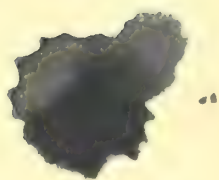
Stenoma anonella Sepp. - A common pest in lowlands of Honduras, it was bred from Annona muricata from Virginia. It is our first record from this country. The fruits of various species in the high lands are frequently infested with two species of Lepidoptera, but the Stenoma has not so far been found.

The oviposition scars of an undertermined insect were very common in certain fincas of the Antigua region in February and March of last year, but not outside of this district. At that time I was unable to



determine the cause of the trouble, as constant travelling did not permit breeding work. This year when the same scars appeared again, we were able to breed out the animals, finding them to be crickets. This year the appearance of the scars was first reported in January. A hasty survey showed that the pest could be found in almost all of the fincas of the Antigua region, although not common in many of them. The most severe infestation so far found is along the edge of a plantation, near extensive cane fields. Jars with syrup have been buried in many likely places, in the hope of catching adults, but so far with no success. In fact, the outstanding mystery in connection with this plague is: where are the adults? Perhaps it is the wrong season, but the freshness of the oviposition scars would seem to contradict this.

The cottony-cushion scale (Icerya purchasi Mask.) was found very abundantly in gardens in Quezaltenango and Huchuetenango. The plants affected included Citrus, Acacia, Laurus, rose, apple, Mimosa, beech, and ivy. Specimens were sent to Dr. Morrison to check the determination.



# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

ENTOMOLOGICAL SURVEY & DEPARTMENT  
ILLINOIS COLLEGE LIBRARY

---

Volume 11

May 1, 1931.

Number 3

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





# INSECT PEST SURVEY BULLETIN

Vol. 11

May 1, 1931

No. 3

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR APRIL, 1931.

The usual reports of more or less serious cutworm damage were received from practically all parts of the United States. Unusual damage by these insects was reported from North Carolina, North Dakota, Nebraska, Montana, and parts of Idaho.

Serious Hessian fly infestations are reported from western Illinois, part of the Platte Valley in Nebraska, and limited areas in Iowa. In Henderson County, Illinois, considerable wheat is being plowed out on account of infestation.

During the middle of April the chinch bug started migrating into the fields in Illinois. By the middle of the month migration was observed in Missouri and Kansas. There is a decided indication of serious chinch bug trouble in southeastern Kansas.

The clover leaf weevil is reported as very abundant in central Illinois and parts of Iowa, Missouri, Kentucky, and Kansas.

The pea aphid is reported in outbreak numbers in parts of Kansas and northeastern Arkansas, Arizona, and southern California. Isolated infestations were reported from Mississippi. The infestation reported in the last number of the Survey Bulletin from the Willamette Valley of Oregon increased materially during late March.

Damage by the shot-hole borer is reported to be unusually severe in Ohio this spring. In view of the very extensive and serious drought of 1930 it is surprising that severe damage by this insect is not more extensively observed.

The first record for 1931 of the pupation of codling moths was made in Missouri on April 3; at Cornelia, Georgia, April 15; at Carbondale, Ill., April 12; at Urbana, Ill., April 14; in Nebraska, April 13; in Pennsylvania, April 21; and in Maryland, April 21. The insect is quite generally reported as normally abundant throughout the Middle Atlantic, South Atlantic, and East Central States. In the Rocky Mountain region the insect is reported as very abundant in New Mexico, and as having sustained a very slight mortality in Idaho.

The Eastern tent caterpillar appears to be below normal in numbers throughout the New England, Middle Atlantic, and South Atlantic States.

Deciduous fruit aphids are reported as quite generally below normal in numbers along the Atlantic Seaboard from Massachusetts to Georgia, and westward to Missouri. Reports of an unusual abundance of deciduous fruit aphids have been received from Mississippi. A limited heavy infestation of the apple grain aphid is reported from New York State, and owing to the unusually mild winter the woolly apple aphid was as numerous during the first week of April in Wenatchee, Wash., as they were in July of last year.

Apple leafhoppers are reported as unusually abundant in Connecticut and the East Central States. They are so numerous in parts of Missouri that the fruit growers are becoming alarmed.

The first emergence of the oriental fruit moth to be reported from Georgia was on April 8, at Thomaston. Adults were observed at Roanoke, Va., on April 14.

A very heavy migration of the common red spider into fruit trees in western Washington indicates that the very serious outbreak of last year may be repeated this season.

The plum curculio appears to be delayed in emergence in the South Atlantic States. Only 3 beetles were collected at Thomaston prior to April 4, on which date 35 adults were collected in two hours by jarring. This is about three weeks later than general emergence last year and the latest emergence in 11 years. Adults were observed for the first time on April 14 in Virginia and <sup>southern</sup> Illinois, and on April 15 in Kentucky.

Heavy infestations by the rusty plum aphid are reported from Georgia and Mississippi.

The grape leafhopper is more abundant than usual in the commercial grape sections of northern Ohio. Damage from this insect is more abundant than ever before recorded in the San Joaquin Valley, California, and in the central part of the Valley the insects are so numerous that the small leaves are turning brown.

A severe outbreak of the six-spotted mite has occurred over the entire citrus belt of Florida and some defoliation has resulted where spraying has been neglected.

The vegetable weevil continues to be a serious pest on a variety of truck crops in Mississippi.

The first adult of the spotted cucumber beetle to be observed in Virginia this season was seen at Norfolk on April 3, and the first adult was reported from Illinois on April 15.



The western spotted cucumber beetle is making serious inroads on fields of seedling clover in the Willamette Valley of Oregon, and is doing considerable damage to melons in the San Joaquin Valley of California.

The Colorado potato beetle is reported as unusually abundant in the Chadbourn district of North Carolina, and in the Norfolk district of Virginia. There is also quite a heavy infestation by this insect as far south as Alachua County of Florida.

The seed corn maggot is not so serious as usual on potato seed pieces in the trucking sections of Virginia and the Carolinas, although it is reported as causing considerable damage to snap beans in North Carolina, and doing considerable damage to corn, peas, and beans in western Texas.

The cabbage webworm became so numerous on turnip greens about Lucedale, Miss., that canning operations had to be suspended.

Large quantities of spinach harvested early in April had to be rejected on account of the unusually heavy infestation by the green peach aphid in the Norfolk district of Virginia.

The first adult of the harlequin bug to be observed in Virginia this season was collected April 9. The first specimen observed in the Chadbourn district of North Carolina was recorded as of April 21.

The most serious outbreak of buffalo gnats in many years was reported in Cochona and Tunica Counties, Miss., in the early part of April. It was estimated that more than 200 mules, besides other livestock, were killed by gnats within a day or two. Similar reports of serious infestation were received from parts of Arkansas. Buffalo gnats, Sigulium vittatum Zett., were seriously infesting mules, cattle, and hogs south of Westmoreland, Kans.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR APRIL, 1931.

Grasshoppers have been on the upward trend in many parts of Canada, particularly western Canada, during the past two years, and although they were not sufficiently abundant last year to cause serious crop damage, it is anticipated that serious outbreaks may develop in many parts of the Prairie Provinces and British Columbia, if conditions continue favorable during 1931 and 1932.

The pale western cutworm caused serious crop losses in Saskatchewan and eastern Alberta, during 1930. In Saskatchewan, the insect greatly extended its range and the outbreak was the worst so far experienced, the most severe losses occurring in the south-central region of the province. It is forecast that if weather conditions are average, crop losses will be even greater in the infested regions during 1931.

The red-backed cutworm also was a pest of importance over a large part of the Prairie Provinces during 1930, attacking grain crops, clover, and

vegetable and other garden plants with resultant severe losses in many sections.

Cutworms, in general, were not notably trouble some crop pests in eastern Canada, during 1930, and they were scarcer and less injurious than for many years in British Columbia. The bertha armyworm, which caused crop damage in the Prairie Provinces in 1929, also was scarce.

Few reports of damage by wireworms were received from eastern Canada during 1930, although quite severe injury was noted in sections of southern Quebec and southwestern Ontario. In the West, wireworm depredations were slight in Manitoba, average or below average in Alberta, and much less than in 1929, in Saskatchewan. Damage by these insects was worse than usual in British Columbia, particularly in the Okanagan, Fraser, and Bulkley valleys.

White grubs were markedly injurious in sections of Quebec and eastern Ontario, during 1930, and a major flight of beetles is forecast for May and June, of the present year, over a large area of southern Quebec. Damage to field and garden crops by second and third-year grubs will continue in many sections.

The European corn borer again showed a decrease in infestation, in 1930, over the greater part of the area in Ontario where corn is a major crop. In areas throughout the province where field corn is of little importance, however, a definite upward trend in the infestation of sweet corn was noted. In Quebec, infestations continued relatively light, and in the Maritime Provinces, they are still comparatively negligible.

The Colorado potato beetle was not more than normally injurious in most parts of the Dominion, during 1930, although a moderate increase in abundance over 1929 was reported from parts of the Maritimes and the Prairie Provinces.

Reports indicate an increased abundance of the wheat stem sawfly in the Prairie Provinces during 1930, but crop damage was generally less severe than in 1929.

The diamond-back moth occurred in outbreak form in the Dominion west of Manitoba, during 1930, considerable acreages of cruciferous crops being severely damaged or destroyed in the provinces of Saskatchewan, Alberta, and British Columbia.

Flea beetles of several species were again troublesome pests in various parts of the Dominion during 1930.

The only reports received during 1930, concerning the Hessian fly were from Manitoba and Saskatchewan, where the insect was reported as scarce, and from Vancouver Island, where it caused local damage to wheat.

In late summer, 1930, the green bug, Toxoptera graminum Rond., was recorded for the first time in outbreak numbers, effecting material

damage to oats in sections of western Manitoba and eastern Saskatchewan.

Budmoths continue to decline in Nova Scotia and in the St. John Valley, New Brunswick. In Ontario the budmoth situation appears to be gradually improving, although considerable damage was caused in some localities, during 1930.

The codling moth was unusually injurious in the Maritime Provinces and Ontario during 1930, but was notably scarce and less injurious than for many years in British Columbia.

The oriental fruit moth decreased to a marked extent in peach orchards of the Niagara peninsula, Ontario, during 1930, due to natural control factors.

Spider mites were abundant and destructive on a variety of plants, in many parts of Canada, particularly in the Prairie Provinces, during 1930.

Larvae of a tussock moth, believed to be the white-marked tussock, were found attacking fir, white spruce and alder, in sections of Nova Scotia, in 1930. In British Columbia, the tussock moth, Hemerocampa persodactylata McD., defoliated large areas of Douglas fir in sections of the province.

During 1930, the satin moth was found for the first time in eastern Canada, in the Maritime Provinces, at several points in New Brunswick and Nova Scotia. Previously it was known to occur only in British Columbia, where it was discovered in 1920.

The outbreak of the hemlock looper which developed on the north shore of the St. Lawrence River, in Quebec, between the Bersimis and Pentecote Rivers, and was severe in 1928, declined in 1929, and subsided entirely during 1930. The extensive rainfall in the infested region during the past two years is believed to have been an important factor in the decline of the insect.

Bark beetles are on the increase over large areas in British Columbia, and, during 1930, were unusually destructive, particularly affecting western yellow pine and lodgepole pine.

The black-headed tip moth continued to cause material injury to balsam and white spruce on Cape Breton Island, Nova Scotia, and to balsam, hemlock, Douglas fir, and Sitka spruce over a large part of the coast section of the southern mainland of British Columbia.

Further scouting for the brown-tail moth in Nova Scotia revealed no signs of this pest, and supports the belief that it has been exterminated in Canada. Scouting for the gypsy moth in the eastern townships of Quebec, where a local outbreak was discovered in 1924, indicates that this species also has been completely stamped out.



GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Wisconsin

A. A. Granovsky (April 3): Eggs of Camnula pellucida Scudd. and eggs of Melanoplus femur-rubrum DeG. are moderately abundant. Grasshoppers are on the increase.

Utah

C. F. Knowlton (April): Grasshopper eggs are beginning to hatch, and first instar nymphs have been collected in several localities in Boxelder and Tooele Counties. Overwintering nymphs appear to be less abundant in Tooele and Boxelder Counties than a year ago at this time.

New Mexico

J. R. Eyer (April): Grasshopper eggs are very abundant. Nymphs are commencing to appear in hedge rows adjoining grain fields and pasture lands.

CUTWORMS (Noctuidae)

North Carolina

W. A. Thomas (April 20): A single report of cutworm injury has come to the laboratory at Chadbourn so far this season. There seems to be practically no cutworm injury in this area to date.

C. H. Brannon (April 27): Severe damage has been caused by the variegated cutworm, Lycophotia margaritosa saucia Hbn. to commercial plantings of gladiolas in Carteret County. (April 15): Various species of cutworms are causing unusually serious damage over the State.

Florida

F. S. Chamberlin (April 18): Cutworms are only moderately abundant. Infestations appear less than is usually the case in Gadsden County.

J. R. Watson (April 21): Cutworms are moderately abundant. About as usual.

Kentucky

W. A. Price (April 22): Cutworms are very abundant. The clay-backed cutworm, Feltia gladiaria Morr., is doing serious damage to clover and oats, also to tobacco in the bed.

North Dakota

J. A. Munro (April 11): Half-grown larvae (Euxoa sp.) were sent in by the county agent at Mott, and he states that they are very abundant. This is about the earliest date on record for this office to receive cutworms.

South Dakota

H. C. Severin (April 22): Cutworms are very abundant in alfalfa fields in Perkins County.

Iowa

C. J. Drake (April 27): Cutworms were found in large numbers in Washington County.

H. E. Jaques (April 24): Cutworms are showing up in Union, Monroe, and Pocahontas Counties.

Missouri L. Haseman (April 24): Two or three species of cutworms are very abundant. They are doing some damage to flowers and lawns, and we are expecting within the next month to receive serious complaint of damage on sod corn.

Nebraska M. H. Svenk (April 8): The army cutworm, Chorizagrotis auxiliaris Grote, was noticed in ~~wheat~~<sup>alfalfa</sup> fields of northwestern Boxbutte County west of Hemingford northwest of Alliance. As usual, the worms moving through fields at ~~the~~<sup>an</sup> rate of 15 to 50 feet a day, feeding both day and night. Some fields are already badly damaged. Twenty or more farms are known to be affected involving between 500 and 1,000 acres.

Kansas H. R. Bryson (April 23): Dr. R. C. Smith reports the army cutworm in some alfalfa fields, but scarce, April 18. (April 22): There are indications that cutworm injury is on the increase judging from the number of requests during the past month for information on cutworm control.

Arkansas D. Isely (April 25): Climbing cutworms have been unusually injurious to swelling grape buds in northwestern Arkansas.

Alabama J. M. Robinson (April 20): Cutworms are moderately abundant on cabbage, tomato, and asparagus at Auburn.

Mississippi R. W. Harned and assistants (April): Although cutworms are being quite generally reported from all parts of the State, the only section where they are unusually abundant is in the vicinity of Picayune, Pearl River County.

Texas F. L. Thomas (April 20): Cutworms are reported at College Station. Less complaint than usual.

Montana A. L. Strand (April 20): The army cutworm, Chorizagrotis auxiliaris, is present in outbreak numbers from one end of the State to the other. Particular damage is being done in the central region, centering around Fergus County.

Idaho C. Wakeland (April 20): An unidentified species is doing considerable damage to dry-land grain crops in Bannock and Powers Counties.

Nevada G. G. Schweis (April 21): Cutworms are doing some damage to gardens at Reno.

New Mexico J. R. Eyer (April): Cutworms are moderately abundant. Cirphis unipunctata Haw. and Lycophotia margaritosa Haw. have been caught in moderately large numbers in codling moth bait pans.

Oregon L. P. Rockwood (April): Garden cutworms (Euxoa sp. and Feltia sp.) appear to be fewer than last year in Washington County. Neuriza procincta Grote is present in some numbers in oats and vetch fields and in some alfalfa fields.

California E. O. Essig (April 20): Cutworms are moderately abundant at Los Banos, in the San Joaquin Valley.

#### WIREWORMS (Elateridae)

South Carolina P. K. Harrison (April 17): The first specimens of larvae of Horistonotus uhleri Horn. were collected in first 6 inches of soil, three in fallow soil, and one in soil that is being cultivated, at Fairfax.

J. N. Tenhet (April 15): First indications of activity of H. uhleri Horn. at Fairfax this season were noted this week. The spring has been late and cold and wireworm activity is occurring later than usual.

Alabama K. L. Cockerham (April 10): On April 10, examinations at Foley showed the following: Around cabbage plants set 18 inches apart there were 1.4 wireworms (Heteroderes laurentii Guer.) per plant; hills of corn 3 feet apart in the rows showed 5 worms per hill; around corn drilled in the row 8 to 10 inches there were 2 worms per foot; oats drilled thickly in the row showed 13 worms per 10 feet. Corn examined was planted March 19.

Louisiana W. E. Hinds (April 23): Adults of Aeolus dorsalis Say were taken in large numbers in sugarcane fields and near alfalfa fields at Franklin, April 16 and 17.

Nevada G. G. Schweis (April 21): Wireworms are very numerous in Lincoln County.

California E. O. Essig (April 20): Wireworms are moderately abundant in the Delta Region.

S. Lockwood (April 7): A click beetle, Phaeletes canus Lec., was found doing a small amount of damage to the opening buds of apple in Sonoma County, March 28.

#### WHITE GRUBS (Phyllophaga spp.)

Virginia H. G. Walker and G. E. Gould (April 22): White grubs are moderately abundant in the vicinity of Norfolk.

Illinois W. P. Flint (April 20): The first adult June beetles were seen in flight at Carbondale April 16; at Jacksonville, April 14.



- South Dakota H. C. Severin (April 22): White grubs are moderately abundant and are injurious to lawns, grass lands, hay, and meadows at Brookings and Bryant.
- Iowa H. E. Jaques (April 24): White grubs are scarce in Case, Page, Polk, Monroe and Henry Counties, and moderately abundant in Pocahontas, Union, and Des Moines Counties.
- Kansas H. R. Bryson (April 23): White grubs are moderately abundant at Manhattan.
- Missouri L. Haseman (April 24): White grubs are only moderately abundant. June beetles were flying at Springfield, April 21. (Paul H. Johnson)
- Louisiana W. E. Hinds (April 23): May beetles (Phyllophaga sp.) were reported in enormous numbers at lights at Franklin on March 20, emerging during a sultry period just preceding a thunder storm on that night. They were also reported as stripping foliage from young pecan trees at Jennings, about the middle of April. P. congrua Lec. was taken in large numbers at trap lights at Franklin, April 16 and 17.
- Mississippi R. P. Colmer (April 19): May beetles observed cutting young foliage on seedling pecans.
- GREEN JUNE BEETLE (Cotinis nitida L.)
- North Carolina W. A. Thomas (April 10): The work of this insect is much in evidence on the lawns in Chadbourn. Unsightly mounds of earth may be seen on nearly every lawn and in a few places the grass shows signs of dying.
- SCARABAEID BEETLES (Anomala spp.)
- Louisiana W. E. Hinds (April 23): A. undulata Melsh. and A. innuba Fab. have been taken in small numbers at trap lights at Franklin, April 16 and 17.
- RED SPIDER (Tetranychus telarius L.)
- Missouri L. Haseman (April 24): During the month a number of complaints were received regarding red spiders on ornamentals.
- Mississippi H. Gladney (April 17): The red spider is very abundant on citrus and vetch at Ocean Springs, Jackson County.
- Washington M. A. Yothers (April 6): A tremendous migration from the ground and the bark of tree trunks of Delicious and Winesap apples up into the trees was first noticed at Wenatchee April 6. Thousands of trees have been treated with sticky tree-banding material to prevent migration. Some red spiders

are already up in the trees, which are now in the cluster-bud stage. First eggs for the season are being deposited. Orchardists are spraying with summer strength lime-sulphur to destroy the mites above the buds. Last season infestation was first noticed in July. There was serious loss after that time, the trees becoming defoliated and the fruit ceasing to grow further.

## CEREAL AND FORAGE - CROP INSECTS

### WHEAT

#### HESSIAN FLY (Phytophaga destructor Say)

##### Illinois

W. P. Flint (April 20): J. H. Bigger reported severe infestations in western counties. In two hours' time he saw 100 acres in three fields in Henderson County which were to be plowed up because of this infestation. (April 8)

##### Iowa

C. J. Drake (April 27): The spring brood is emerging throughout the State. In the heavily infested counties the flies occur in great numbers.

##### Nebraska

M. H. Swenk (March 1-April 15): The Hessian fly is in general moderately abundant over the southeastern part of the State in early-sown and volunteer wheat, but is menacing only in those sections where the July rainfall was about normal or where the campaign last fall for the destruction of the volunteer and delayed sowing of the crop received less than normal support. Field investigations show that in the Platte Valley counties from northern Saunders and Colfax Counties to Hall County there is a rather heavy infestation in many fields. In Colfax County the infestation in two fields was 3.6 and 4.25 puparia per infested stem. A Platte County field showed 56 per cent of the stems infested with an average of 1.77 puparia per infested stem. In Hall County the fly is quite plentiful, with volunteer wheat very heavily infested. Early sown fields in York and Jefferson Counties have been considerably injured in a number of cases. A survey of Lancaster, Seward, northern Saline, western Cass, and southern Saunders Counties that has just been completed showed relatively light infestations except occasionally in early sown or volunteer wheat. The worst infested field in this area was an early sown one northwest of Lincoln which showed 17 per cent of the stems to be infested with an average of 1.4 puparia per infested stem. Fields which were sown on or after the announced fly-safe date are practically free from infestation. On April 15 but few of the flies had emerged from the puparia, but there were many pupae present and a heavy wave of emergence is apparently due. (April 20): The Hessian fly is moderately abundant in Platte Valley from Fremont to Grand Island and locally southward.

Iowa

H. E. Jaques (April 24): The Hessian fly is scarce in Osceola, Cass, and Madison Counties; moderately abundant in Harrison, Mills, Crawford, Warren, Monroe, Henry, Des Moines, and Page Counties; and very abundant in Monona, Fremont, and Polk Counties.

Oregon

M. M. Reeher (March 19): The Hessian fly began emerging at Forest Grove on the 19th of March. On account of the dry season last fall most of the spring emergence will come from overwintering flaxseeds on the stubble, as few flies emerged and little volunteer wheat appeared until too late for oviposition.

### CORN

#### CHINCH BUG (Blissus leucopterus Say)

Illinois

W. P. Flint (April 20): Chinch bugs are now flying and have flown to fields in the central and south-central parts of the State. A considerable area shows bugs abundant enough in the small grain fields to cause very serious losses if the weather remains dry or even normal. (April 20): J. H. Bigger reports that chinch bugs were seen flying in Menard and Sangamon Counties April 14, in Hancock County April 17, and in Adams County April 15. Heavy infestation in portions of Menard and Sangamon Counties. The Christian County Farm Adviser reports extremely large numbers.

Missouri

L. Haseman (April 24): The chinch bug is very threatening. Over-wintering bugs migrated April 15-16.

Kansas

H. R. Bryson (April 23): Information taken from the Kansas Weekly Crop Report dated March 20 indicates that chinch bugs may become a menace in the southeastern counties and that many survived the mild winter in spite of burning campaigns carried on in this area to reduce the number emerging from hibernation this spring. Additional information in the Weekly Crop report of April 20 records an observation of the county agent of Wilson County who observed a flight of bugs on April 11. Large numbers of bugs apparently survived the mild winter in that county. Chinch bugs are reported as having killed 25 acres of newly sown wheat last fall in Sumner County and are abundant in that locality this spring. Chinch bugs are scarce but present at Manhattan.

Oklahoma

C. F. Stiles (April 27): Chinch bugs are very numerous in the northeastern part of the state, and in some counties in the north central portion. One farmer reports that wheat is firing (?) in Nowata County. These pests overwintered here at Stillwater in large numbers. We expect serious damage



unless the weather is unfavorable to chinch bug development before the small grains are cut.

CORN EAR WORM (Heliothis obsoleta Fab.)

- Florida J. R. Watson (April 21): The corn ear worm is scarce, except in the southern part of the State where it is moderately abundant.
- Missouri L. Haseman (April 24): Diggings at Columbia revealed 1 pupa of the corn ear worm, 3 dead, and 4 decomposed.
- Mississippi R. W. Harned and assistants (April): H. H. Carpenter (April 20): The corn ear worm is scarce in northern Mississippi.
- Louisiana W. E. Hinds (April 23): The corn ear worm has not been found yet at Baton Rouge.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

- Mississippi R. W. Harned (April 22): Complaints of killed or more or less severely injured corn, accompanied by specimens of the corn flea beetle, C. pulicaria, have been received from Lee, Lauderdale, Neshoba, and Leake Counties.

CORN SEED BEETLE (Agonoderus pallipes Fab.)

- Illinois W. P. Flint (April 20): Corn seed beetles flew out of hibernation in Warren County April 7.

ALFALFA, CLOVER, ETC.

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

- Nevada G. G. Schweis (April 21): The first eggs of the alfalfa weevil were observed on April 6 at Reno.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

- Illinois W. P. Flint (April 20): The clover leaf weevil is very abundant in central Illinois but frequent light showers and warm weather are producing conditions so favorable to the growth of the clover plant that there will be no permanent damage from the weevil.
- Kentucky W. A. Price (April 22): The clover leaf weevil larvae are very numerous and doing much damage to clover at Brandenburg, April 8.
- Iowa H. E. Jaques (April 24): The clover leaf weevil is doing serious damage in some clover fields in Des Moines County.

C. J. Drake (April 27): The clover leaf weevil has been reported by the county agents in the counties of Madison, Union, and Washington as occurring in large numbers in clover fields and doing a considerable amount of damage.

Missouri

L. Haseman (April 24): The clover leaf weevil larvae are rather abundant again this year though apparently no worse than usual. They are beginning to pupate at this date.

Kansas

H. R. Bryson (April 23): The clover leaf weevil is slightly more numerous than usual. Dr. R. C. Smith reports damage in one field near Alta Vista. All sizes of larvae are present in all alfalfa fields. Generally there is no apparent injury. First cocoons were found April 11. One report from a county agent states that this pest was injuring alfalfa in a field at Clements. An infestation of 5 larvae per crown was observed on a 2-year-old stand.

PEA APHID (Illinoia pisi Kalt.)

Virginia

G. E. Gould (April 22): The pea aphid is moderately abundant on alfalfa, but is still scarce on garden peas.

Kansas

H. R. Bryson (April 23): Dr. R. C. Smith reports pea aphids present, but in small numbers only, in most alfalfa fields. No injury has been seen or reported. Only the winged forms have been seen so far. Growing conditions are excellent for alfalfa now. Lady bird beetles, Hippodamia convergens Guer. and Adalia bipunctata L., are plentiful. Dr. E. G. Kelly states that numbers are increasing to outbreak proportions at Larned and Great Bend. There is a slight outbreak also at Dodge City.

Arkansas

D. Isely (April 25): An outbreak of green pea aphids on alfalfa has been reported from central and northeastern Arkansas.

Mississippi

R. W. Harned and assistants (April): Pea aphids were collected on alfalfa at Pace on April 18, and on Austrian winter peas at Cleveland on April 19. Infestations were spotted and in places very severe. The specimens received were heavily parasitized.

Oregon

L. P. Rockwood (April 2): Infestation increased rapidly during March on early fall-sown vetch and Austrian peas where the aphids established themselves last fall and survived the mild winter in viviparous form. They have become abundant on cover crops in some orchards of Washington and Yamhill Counties. The fungus Entomophthora aphidis Hollman has checked them in one orchard, but although present in other places it has not been observed as epidemic. A few Hippodamia convergens Guer. have appeared in the fields and Coccinella trifasciata Linn. are present in large numbers in some old prune orchards, in or

near which they probably hibernated. Hippodamia spuria Lec. and H. ambigua Lec., which are hibernating together on a bald hill in Yamhill County, had not left their cache by March 22. They are present in great numbers in this cache. Some were affected by the fungous disease Beauveria globulifera Speg. The first alate viviparous females were found March 16, but very few and not many nymphs. There is as yet no indication that late-fall-sown vetch and Austrian field peas have become infested by I. pisi migrating from early-fall-sown vetch.

ALFALFA CATERPILLAR (Eurymus eurytheme Boisd.)

Kansas

H. R. Bryson (April 23): R. C. Smith reports on April 18 finding several nearly grown larvae of the alfalfa caterpillar, but no injury has been seen or reported. Adults were present about April 11, but very scarce and below normal in abundance, at Manhattan.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (April 23): The first moths emerged March 16, and a number have since emerged from overwintering larvae collected in the fields on March 20. A few adults, mostly males, taken at trap lights, Franklin, April 16 and 17.

SUGARCANE BEETLE (Euetheola rugiceps Lec.)

Louisiana

W. E. Hinds (April 23): E. rugiceps is abundant again in St. Mary Parish where the heaviest infestation has centered continuously for more than 50 years past. Beetles have been injuring sprouts of cane and corn since the last week of March but no egg laying occurred before the middle of April. Adults were taken at trap lights at Franklin in considerable numbers on April 16 and 17, when night temperatures of 60 degrees F. or higher prevailed. Mating and egg laying were just beginning apparently about April 16. A few specimens of Ligyris gibbosus DeG. were also captured.

A SCARABAEID (Dyscinetus trachypygus Burm.)

Louisiana

W. E. Hinds (April 23): Large numbers were taken at trap lights near the banks of Bayou Teche at Franklin on April 16 and 17.



## FRUIT INSECTS

### TARNISHED PLANT BUG (Lygus pratensis L.)

- New York      Weekly News Letter, New York State College of Agriculture (April): The tarnished plant bug is reported as unusually abundant in Ulster County, where it is damaging apple and pear buds. (Abstract J.A.H.)
- Illinois      S. C. Chandler through W. P. Flint (April 18): Moderate numbers of the tarnished plant bug were taken last week. None were taken in jarring at Carbondale this week. They were quite numerous in apple orchards throughout central and southern Illinois.
- Kentucky      W. A. Price (April 22): Tarnished plant bugs were abundant in the State on April 15.
- North Dakota      J. A. Munro (April 18): Quite a few tarnished plant bugs have been noticed of late.
- Nebraska      M. W. Swenk (March 15 - April 15): The first tarnished plant bugs were observed flying about at Lincoln on February 26 by D. B. Whelan. On April 15 a Nemaha County correspondent reported that this pest was killing many of the apple buds in his orchard, the pest being present at the rate of three or four to the bud.
- Washington      R. L. Webster (April 14): Reported as doing considerable damage to pear buds, the injury being evident last week in Wenatchee and Okanogan Valleys. Probably the injury is fully as severe as in 1930.

### SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

- Ohio      T. H. Parks (April 27): More complaints have reached our office about this insect during the past two months than in many years. The drought of 1930 apparently placed trees in condition to receive damage from this pest.

### FLEA BEETLES (Halticinae)

- Kentucky      W. A. Price (April 22): Flea beetles are abundant in orchards about Henderson and Lexington.

### SCARABAEID BEETLES (Scarabaeidae)

- North Carolina      R. W. Leiby (April 22): Hoplia trivialis Harold is reported as defoliating new leaves and growth of peach trees in a very few orchards at Winston-Salem. (Det. by C.S. Brimley.)

- Mississippi R. W. Harned (April 22): On April 15 a correspondent at Baldwyn sent 22 adults of E. trivialis and 2 adults of Serica sp. to this office with the following comment: "I have 2 acres of young apple and pear trees and these beetles are defoliating them." (Det. E. A. Chapin.)
- California S. Lockwood (April 7): Many specimens of Hoplia sackeni Lec. were collected in the heads of barley grown in an orchard in Sonoma County. Mr. Branner states that he has seen some damage to young apple trees by this insect.
- North Carolina R. W. Leiby (April 22): Serica iricolor Say has been reported as defoliating new leaves and growth of peach in a very few orchards at Winston-Salem. (Det. by C. S. Brimley.) Dichelonyx fuscata Lec. has been reported as defoliating new leaves and growth of peach in a very few orchards at Winston-Salem.

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

- New Jersey Weekly News Letter, New Jersey State College of Agriculture (April 21): Codling moth larvae are in abundance in the Glassboro area, Gloucester Co., and more than I have ever seen before. Codling moth pupae can be found without difficulty. It is estimated that 5 to 10 per cent of the moths are in the pupal stage at the present time. Some empty pupal cases have been found. Whether these empty cases are from last year or not, has yet to be determined.
- Pennsylvania H. N. Worthley (April 22): The codling moth is moderately abundant at State College. The first pupae appeared April 21.
- Maryland E. N. Cory (April 22): P. D. Sanders has examined over 250 codling moth larvae and found eight in the pupal stage today.
- South Carolina A. Lutken (April 27): Adult codling moths emerged April 24 at Clemson.
- Georgia C. H. Alden (April 20): The codling moth is moderately abundant at Cornelia. The moths began to emerge April 15.
- Ohio T. H. Parks (April 10): Overwintering codling moth larvae at Columbus have been fed upon by birds so freely that it is impossible to collect any number from tree trunks. Between 200 and 300 were collected by Mr. C. H. Huff from crates piled in a packing house. This insect seriously damaged the apple crop in Lawrence County last fall and is not difficult to find

hibernating on tree trunks. One orchard company employed nine workmen to scrape the tree trunks of all the trees in 100 acres of orchard. This removed the larvae with the loose bark. Birds followed the workmen and extracted the larvae from the fallen bark. Woodpeckers, robins and even the starling took an active part in this.

Illinois

W. P. Flint (April 13): Pupae were first observed in cages at Carbondale on April 12, and at Urbana April 14. Northern Illinois (Des Plaines). Of 150 overwintering larvae in cages examined, 146 were alive and none had pupated; of 26 larvae found under bark on trees in an orchard none pupated but all were alive.

Missouri

L. Haseman (April 24): The codling moth has wintered well at Columbia and began pupating in the middle of April.

R. M. Jones (April 20): The first record of pupation was made on April 3.

Nebraska

M. H. Swenk (March 1 - April 15): The first pupation of wintering larvae was observed on April 13, 5 days earlier than in 1930, 13 days earlier than in 1929, and 25 days earlier than in 1928.

Idaho

C. Wakeland (April 20): Winter mortality of the codling moth is very light.

New Mexico

J. R. Eyer (April): The codling moth is very abundant. Adults are being captured in bait traps in large numbers.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Maine

H. B. Peirson (April 25): The eastern tent caterpillar is moderately abundant at Alfred. Hatching began April 20 in southern Maine.

New Hampshire

P. R. Lowry (April 11): The tent caterpillars are hatching and are clustered on the egg masses at Durham. This insect is not especially common this year.

Vermont

H. L. Bailey (April 23): The eastern tent caterpillar is moderately abundant in Central Vermont. Tents were being formed April 21.

Massachusetts

J. V. Schaffner, jr. (April 13): Of about 25 egg clusters examined, on wild black cherry, five were hatching. Two of the egg clusters were fairly well covered with larvae.

Connecticut

E. P. Felt (April 24): The eastern tent caterpillar does not appear to be at all abundant in southwestern New England.



W. E. Britton (April 24): Eastern tent caterpillars are scarce.

New York Geneva Experiment Station (April 23): The eastern tent caterpillar is moderately abundant in western New York.

Maryland E. N. Cory (April 22): The apple tree tent caterpillar appears to be quite numerous in Prince Georges and Anne Arundel Counties.

P. D. Sanders (April 21): This insect is numerous on the Eastern Shore, Wicomico County.

Virginia H. G. Walker and G. E. Gould (April 22): The eastern tent caterpillar is scarce at Norfolk. Larvae were observed on April 16 on apple and also on wild cherry. The insects were apparently in the second instar. The colonies are not so abundant this year as last.

North Carolina W. A. Thomas (April 10): Small webs of this insect are very noticeable at Chadbourn. The larvae are later in appearing this season as the wild cherry was much later than usual in putting out foliage.

R. W. Leiby (April 22): Apple tree tent caterpillars are nearly half grown in the Piedmont section of North Carolina. The tents appear to be present in average numbers, on apple and wild cherry.

South Carolina P. K. Harrison (March 30): The first specimens of the eastern tent caterpillar were found this season on wild cherry. Specimens were about one-half grown.

A. Lutken (April 27): Eastern tent caterpillars are very abundant on wild cherry.

Florida H. T. Fernald (April 25): Apple tree tent caterpillar adults have appeared but are not very abundant.

PISTOL CASE BEARER (Coleophora malivorella Riley)

Michigan R. K. Pettit (April 24): Professor Hutson ran on to the pistol case bearer doing some injury at Muir early this week. This is the first time that we have known this insect to be of any consequence in this State.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

New York Geneva Experiment Station (April 23): The fruit tree leaf roller is locally abundant in western New York.

Weekly News Letter, New York State College of Agriculture (April): The leaf roller began hatching in the Hudson River Valley during the last week in the month. (Abstract, J.A.H.)

California

E. O. Essig (April 20): Fruit tree leaf rollers are moderately abundant in many places.

EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)

New York

Weekly News Letter, New York State College of Agriculture (April): The first bud moths to be seen emerging this season were reported from Ulster County during the third week in April. To date but little damage has been done. (Abstract, J.A.H.)

Geneva Experiment Station (April 23): The bud moth is abundant in western New York.

APHIDS (Aphidae)

Massachusetts

A. I. Bourne (April 24): Plant lice were hatching from the 6th to the 8th of April, and were out in considerable numbers by the 9th and 10th. This season we do not have a very important infestation. The aphids appear to be rather less abundant, if anything, than last year.

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (March and April): Aphid eggs during the latter part of March were more difficult to find than usual in most orchards throughout the State. (Abstract, J.A.H.)

Pennsylvania

J. R. Stear (April 22): Found 23 aphids on 1,106 apple buds in the delayed dormant stage. These were either Aphis pomi DeG. or Rhopalosiphum prunifoliae Fitch. Scarce at Ligonier.

Georgia

C. H. Alden (April 20): Fruit aphids are scarce at Cornelia.

Missouri

L. Haseman (April 24): Fruit aphids are scarce at Columbia. For some unknown reason the various species of plant lice seem to be developing more slowly than usual in Missouri this spring.

Mississippi

R. W. Harned and assistants (April): Fruit aphids are reported as unusually abundant throughout the State.

Nevada

G. G. Schweis (April 21): Fruit aphids are reported at Reno. There is some curling on peach.

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut

N. Turner (April 9): Four large apple orchards at Cheshire had very few rosy aphid eggs.

New York C. R. Crosby (April 24): The rosy aphid is scarce east of the Hudson River, more abundant west of the river.

Weekly News Letter, New York State College of Agriculture (April): The first aphids to be reported in Ulster County were observed on April 8. By the middle of the month hatching was quite general throughout the lake fruit-growing area but on the whole numbers were below normal by the 20th of the month. Although the rosy apple aphid was normally abundant in the Hudson Valley early in the month, by the end of the month this species had practically disappeared. The first rosy apple aphid in the field was observed in Orange County April 9 and in Dutchess County April 10.

Geneva Experiment Station (April 23): The rosy aphid is moderately abundant in western New York.

Pennsylvania H. N. Worthley (April 17): Newly hatched stem-mothers began to appear on opening apple buds April 17. Not abundant.

South Carolina A. Lutken (April 27): This insect is scarce in the north-western part of the state.

Ohio T. H. Parks (April 27): Though the blossoms are only in the full pink condition of development, a few of these aphids can be found on apple leaves and the "curl" of the leaf already noticed. One aphid was already mature and giving birth to young in Lawrence County, April 23. Mr. C. H. Huff also reports a few present at Cincinnati.

Missouri R. M. Jones (April 20): Rosy aphids are generally scarce.

Mississippi R. W. Harned and assistants (April): The rosy aphid is attracting more attention than for a number of years in practically all parts of the State.

#### APPLE APHID (Aphis pomi DeG.)

New Hampshire P. R. Lowry (April 14): Green apple aphid stem-mothers have been found on the tips of swollen apple buds at Durham. Eggs were well distributed but not especially abundant this year.

Vermont H. L. Bailey (April 23): Observations through the western and central part of the State point to a considerable reduction in number of green apple aphid eggs. No nymphs were found in inspections April 20-22.

New York Weekly News Letter, New York State College of Agriculture (April): The green apple aphid was quite numerous in central New York by the middle of the month, and was very numerous at that time in western New York. The first adult of this species to be observed in Ulster County this year was seen on April 8.



Geneva Experiment Station (April 23): Green aphids are scarce in western New York.

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (April): Green aphids were observed in Burlington County for the first time this year on April 17, in five orchards along the riverfront and Moorestown section, but only one or two per leafy bud, mostly near center of tree and on sucker growth of apple.

Wisconsin

A. A. Granovsky (April 3): Eggs are moderately abundant.

Missouri

R. M. Jones (April 20): Green aphids are generally scarce.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

New York

Weekly News Letter, New York State College of Agriculture (April): The apple grain aphid was observed to be very numerous in Monroe, Wayne and other lake counties. As high as 10 or 12 aphids per bud were observed in some cases. This species seems to be the predominant aphid in the Hudson River Valley. First adults were observed in Ulster County on April 6. By the third week in the month buds were heavily infested in central and western New York.

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (March and April): The first apple grain aphids of the season were observed in Monmouth County April 3. Eggs were probably hatching throughout northern and southern New Jersey during the second week in the month.

Pennsylvania

H. W. Worthley (April 17): Newly-hatched stem-mothers began to appear on opening apple buds April 15, at State College. Not abundant.

Wisconsin

A. A. Granovsky (April 3): Eggs of this insect are moderately abundant.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Virginia

H. G. Walker and G. E. Gould (April 22): The woolly aphid is moderately abundant at Norfolk.

Washington

M. A. Yothers (April 1): Owing to unusually mild winter temperatures great numbers of aphids have survived on the branches and trunks of apple trees. Colonies were as numerous and flourishing in March as they were by July last year, at Wenatchee.

APPLE LEAFHOPPERS (Cicadellidae)

Connecticut

W. E. Britton (April 24): Apple leafhoppers are very abundant and eggs are abundant.

- Kentucky W. A. Price (April 22): Leaf hoppers are very abundant in central and western Kentucky, resulting in much spotting of the leaves on apple.
- Ohio T. H. Parks (April 23): Adults (Erythroneura obliqua Say) overwintered and are now quite abundant in some orchards in Ohio River Counties. Observations were made in Hamilton, Clermont and Lawrence Counties.
- Missouri R. M. Jones (April 20): Apple leafhoppers are moderately abundant.
- L. Haseman (April 24): Apple leafhoppers are very abundant at Columbia. Growers are much worried about their abundance.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

- Ohio T. H. Parks (April 25): The apple flea weevil in central and southern counties is now quite numerous on trees in some orchards. There appears to be serious damage ahead in some orchards. This insect has increased greatly during 1930 after being brought under control by a parasite in 1929. The infestation is spotted in central and southern counties.

APPLE TWIG BORER (Amphicoris bicaudatus Say)

- Missouri L. Haseman (April 24): About the 15th of April a heavy swarm of grape cane borer beetles was reported at Tipton. It was reported that the air was simply alive with them and they collected in such numbers on the gasoline hose at a filling station as to completely cover the hose.

A WEEVIL (Stamoderes uniformis Csy.)

- California S. Lockwood (April 7): On the 28th of March Mr. O. E. Brenner, Agricultural Commissioner of Sonoma County, and I found this weevil, in abundance in one orchard of Gravenstein apples. Banding of the trees had kept them from attacking the buds, but it was very easy to find two to ten pairs of weevils below the bands. On the sucker growth, not protected, the buds were all destroyed.

A WEEVIL (Stamoderes setulosus Lac.)

- California A. C. Davis (April 3): The beetles were attacking newly set avocado trees, eating out the leaf buds and growing tips. This orchard of avocado is upon newly cleared land at Laguna. Found 1 to 3 per tree. (Det. by E. C. Van Dyke.)

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Vermont H. L. Bailey (April 23): The San Jose scale is scarce. Scattering infestations in Charlotte, and Chittenden Counties.

- Georgia O. I. Shapp (April 8): The percentage of dead scales on unsprayed peach trees has increased during the spring months. It is now 25.5. On January 6, 1931, it was only 3.4 per cent and on December 3, 1930, it was only 6.7 per cent at Fort Valley.
- Ohio G. A. Runner (March 1-31): The San Jose scale is more abundant on apple and peach than in the previous year.
- Iowa H. E. Jaques (April 24): The San Jose scale is moderately abundant in Grundy and Cass Counties.
- Alabama J. M. Robinson (April 20): The San Jose scale is moderately abundant at Auburn.

EUROPEAN RED MITE (*Paratetranychus pilosus* C. & F.)

- Vermont H. L. Bailey (April 23): European red mite eggs were found wherever inspections were made in the State. Inspections were in Washington, Orange, Chittenden, Addison, Rutland, and Windsor Counties. The mite was on old, uncared-for trees as well as on young orchard trees. In a few cases infestation was heavy, however. Apparently mites had not begun hatching April 22.
- Connecticut N. Turner (April 9): One large apple orchard had a larger number of eggs than last season, apparently about twice as many. Other well-sprayed orchards had few eggs at Cheshire. This mite appears to be moderately abundant at Meriden according to Dr. Garman's observations.
- New York Weekly News Letter, New York State College of Agriculture (April): On April 7 in the northern end of Cayuga County a very few red mite eggs were found. The first record of hatching of the European red spider was received from Ulster County on April 22. As a whole this insect is not being reported as unusually abundant so far this season. (Abstract J.A.H.)
- New Jersey Weekly News Letter, New Jersey State College of Agriculture (March and April): Although many counties report but little infestation by the red mite it is believed that this pest occurs in sufficient numbers to require spraying in many orchards. (Abstract J.A.H.)

PEACH

PEACH BORER (*Acronia exitiosa* Say)

- Ohio T. H. Farbs (April 27): Attacks by the peach tree borer are causing much concern on the part of the growers in the State



this spring. Complaints are more numerous than usual at this time of year. Many trees have been seriously injured. Some growers will use the para-dichlorobenzene treatment next month.

Missouri

L. Haseman (April 24): The peach borer is very abundant in central Missouri.

Alabama

J. M. Robinson (April 20): The peach borer is moderately abundant at Auburn.

LESSER PEACH BORER (*Sesia pictipes* G. & R.)

Georgia

O. I. Snapp (April 3): Adults of the lesser peach borer are now on the wing. Male and female moths were captured today in peach orchards.

ORIENTAL FRUIT MOTH (*Laspeyresia molesta* Busck)

New Jersey

J. Gray (March): Examination was made of trees for overwintering pupae. Some live pupae were found but mortality in the Moorestown area appears to be fairly heavy on the whole.

Virginia

W. J. Schoone (April 14): Mr. L. R. Cagle found adults of the peach moth in orchards near Roanoke on April 14. The Elberta peaches were in full bloom on this date.

South Carolina

A. Iutken (April 27): Adults of the oriental fruit moth emerged April 8 in the northwestern part of the State.

Georgia

B. A. Porter (April 27): The first spring-brood oriental fruit moths were captured in bait traps on April 10 at Cornelia. The condition of the eggs in the females captured on this and the following day indicated that emergence began in the orchards on April 9. The overwintering brood is extremely small. The first oriental fruit moth twig injury appeared April 25.

C. H. Alden (April 20): The oriental fruit moths are emerging in moderate abundance but there is no twig injury yet at Cornelia.

O. I. Snapp (April 20): No twig injury has been observed at Fort Valley to date.

W. H. Clarke (April 3): The first adult of the overwintering broods emerged in the insectary April 3, at Thomaston.

Tennessee

H. G. Butler (April 1): The insectary stock of overwintering larvae at Harriman came through the winter with very little loss. None of the larvae of this stock have pupated at this time.

Mississippi

R. W. Harned and assistants (April): The oriental fruit moth is reported as moderately abundant throughout the fruit-growing sections of the State. (Abstract J.A.H.)

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (April 21): A few curculios have been observed in Gloucester County.

Virginia

W. J. Schoene (April 14): Mr. L. R. Cagle found adult plum curculios in orchards near Roanoke on April 14 and Mr. A. M. Woodside captured plum curculios in peach orchards at Crozet on the same day by jarring. The Elberta peaches were in full bloom on this date at both places.

North Carolina

R. W. Leiby (April 8): The first adults were jarred from peach trees at Southern Pines on April 3. This date is ten days later than for the season 1930.

South Carolina

A. Lutken (April 27): This insect emerged from hibernation April 13 in the northwestern part of the State.

Georgia

W. H. Clarke (April): Previous to April 4 only three adult curculios had been caught on jarring frames at Thomaston. On that day 35 adults were caught in less than two hours of jarring. April 9: The emergence of the plum curculio from hibernation has steadily increased since the 4th. The number of curculios being caught by jarring is much smaller than last year. Feeding and mating have been recorded in the insectary, the first mating being noted on April 7. No eggs have been found.

O. I. Snapp (April 11): The first egg of the season was found at Fort Valley today. Oviposition is starting later than last year which was considered late. (April 20): Adults are now all out of hibernation at Fort Valley and are distributed throughout orchards. They were about one month later than usual leaving hibernation, and the period of emergence from hibernation was of short duration. The population in the field at present is much lighter than at this time last year, and we are not anticipating serious damage from this insect this year. The unfavorable conditions during the 1930 pupation season, the excellent spraying season last year, and an unusual amount of jarring of trees are factors which reduced the curculio population. Adults began to appear in peach orchards at Fort Valley in numbers April 4. In one locality we took 87 from 5 trees. Only an occasional single individual was found previous to this date, as follows: March 26, 2; March 28, 1; April 2, 1; April 3, 6. Evidently they are just beginning to leave their winter quarters as a result of the

high temperatures recorded during the last several days. They are later leaving hibernation this year than during any of the last 11 years. Last year they began to leave hibernation in numbers on March 17, and that was considered late. Year before last they began to leave hibernation the first week in March. The curculio should not cause a great amount of damage this year. It is very doubtful if there will be any second generation.

C. H. Alden (April 20): The first beetles of the plum curculio were caught April 14. They are scarce at Cornelia and moderately abundant at Thomaston.

Florida

J. R. Watson (April 21): The plum curculio is scarce for this date. Weather is too cool for rapid development.

Kentucky

W. A. Price (April 22): The plum curculio's first emergence record in the State this year was obtained at Henderson on April 15.

Illinois

W. P. Flint (April 18): First plum curculio jarred on April 14 in unsprayed, neglected orchard at Carbondale. None found to date in sprayed orchards.

Tennessee

H. G. Butler (April 1): No emerging plum curculio adults have yet been taken by jarring trees near timber in the vicinity of Harriman. Five to ten per cent of the peach buds have opened by this time.

Alabama

J. M. Robinson (April 20): The plum curculio is moderately abundant at Auburn.

Mississippi

R. W. Harned and assistants (April): The plum curculio is not reported as unusually abundant as yet from any part of the State.

A PENTATOMID BUG (Brockmusa quadripustulata Fab.)

Mississippi

R. W. Harned (April 27): On April 22 M. D. Peets sent to us adults collected in a peach orchard at Brookhaven. He wrote: "Two years ago I think these insects were the cause of scars and deformed peaches. At the present time I noticed more on pecan trees than on peaches." He indicated that the infestation was light.

GREEN PEACH APHID (Myzus persicae Sulz.)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (March and April): Peach aphids may be found in larger numbers than usual from indications of material brought into the green-houses during the winter. (Abstract J.A.H.)



PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Massachusetts

A. I. Bourne (April 24): The pear psylla eggs were being deposited about the 10th of April. This was the date when they were first observed in the College blocks although the warm weather during the preceding week had brought out many hibernating psyllas on the pear branches.

New York

Weekly News Letter, New York State College of Agriculture (April): The pear psylla began ovipositing in the lower Hudson River Valley during the last week in March. Adverse weather, however, cut down egg laying during the first week in April, and although large numbers of the adults were observed, practically no eggs were seen during the week. During the second week egg laying became heavy in this region, while in western New York the psyllas were just starting to emerge. During the second week in April egg laying was observed to be quite general in Niagara County. During the last week of the month hatching was quite general in the Hudson River Valley and egg laying quite prevalent in western New York. (Abstract J.A.H.)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (April 14): The pear psylla has been active during the week and large numbers of eggs have been observed. (Abstract J.A.H.)

PEAR MIDGE (Contarinia pyrivora Riley)

New York

Weekly News Letter, New York State College of Agriculture (April): Adults of the pear midge emerged in large numbers during the last week of April, necessitating spraying in the Hudson River Valley. (Abstract J.A.H.)

CHERRY

BLACK CHERRY APHID (Myzus cerasi Fab.)

New York

Weekly News Letter, New York State College of Agriculture (April): The black cherry aphid was reported quite generally during the first half of the month in the Hudson River Valley. (Abstract J.A.H.)

PLUM

RUSTY PLUM APHID (Hysteronura setariae Fios.)

Georgia

W. F. Turner (April 14): The rusty brown plum aphid is showing up abundantly again this year on Prunus hortulana at Fort Valley. To date we have not seen it on any other species of peach, plum, or apricot although the infested trees are surrounded by other species.

O. I. Snapp (April 9): Heavy infestation in a commercial plum orchard at Rochelle. (April 16): Another heavy infestation on plum trees at Americus.

Mississippi

R. W. Harned (April): The rusty plum aphid is reported as very unusually abundant from practically all parts of the State.

### RASPBERRY

RASPBERRY CANE MAGGOT (Phorbia rubivora Coq.)

New York

Weekly News Letter, New York State College of Agriculture (April): About 25 per cent of the canes were killed in planting by the raspberry cane maggot. (Abstract J.A.H.)

### GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Ohio

G. A. Runner (March 1-31): Overwintering brood abundant in all vineyards visited at Sandusky. Owing to heavy infestation late in season, last year, and very favorable conditions for overwintering, these insects are more abundant than in the spring of 1930.

Utah

G. F. Knowlton (April 1): Grape leafhoppers are beginning to appear on Virginia creeper at Salt Lake City.

California

E. O. Essig (April 20): Grape leafhoppers are the most abundant ever known in the San Joaquin Valley. Hibernating adults are doing much damage.

S. Lockwood (April 18): You will be interested to learn that the grape leafhopper in the San Joaquin Valley is now more abundant than earlier reports and surveys seemed to indicate. Many of the smaller leaves, now about a quarter of their full size, have been so damaged that they have turned crisp and brown. This refers to the middle part of the San Joaquin Valley especially, though almost the entire area is supporting a far larger than normal population.

GRAPE FLEA BEETLE (Ealtica chalybea Ill.)

Ohio

E. W. Mendenhall (April 18): The grape buds are being attacked and destroyed by the grapevine flea-beetle at Bethel and vicinity in Clermont County. Immediate spraying with lead arsenate is necessary.

Missouri

R. M. Jones (April 20): Several fruit growers report moderate infestations of the grape flea-beetle.

Arkansas

D. Isely (April 25): The grapevine flea beetles have been unusually injurious to swelling grape buds in northwest Arkansas.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Ohio

G. A. Runner (March 1-31): Examinations of overwintered material show survival of pupae to be about normal at Sandusky. No exact counts were made of material kept in vineyards. In the insectary practically out-of-door conditions prevail; one lot of cocoons protected with a light covering of grape leaves (120 cocoons) showed a survival of about 70 per cent.

PECAN

HICKORY SLUCK WORM (Laspeyresia caryana Fitch)

Alabama

J. M. Robinson (April 20): Pecan sluck worm moths emerging at Auburn April 20.

PECAN CASE BEARER (Acrobasis juvlandis LoB.)

Mississippi

J. P. Kislanko (April 20): April 11. The pecan leaf case-bearers are moderately abundant in the vicinity of Wiggins, Stone County, and are now feeding on the young growth of pecans.

H. Dietrich (April 21): The pecan leaf case-bearer is moderately abundant on pecans at Lucedale.

R. W. Harned (April 27): On April 22 Inspector R. P. Colmer reported very severe damage to a pecan orchard near the city limits of Pascagoula, by case-bearers. Specimens sent to this office were tentatively identified by J. M. Langston as leaf case-bearers. On April 21 Walter Lewis, Pascagoula, sent specimens with the information that a good many trees in that section were covered with the case-bearer; in fact, more than ever before.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Mississippi

J. P. Kislanko (April 20): The flat-headed apple tree borer is quite abundant on young pecan trees near Haxie, Stone County.

Mississippi State Plant Board, Press Release (April 27): Injury from the flat-headed apple tree borer was reported on young pecans in Forrest County and on recently pruned pecan orchards in Adams County.



BLACK PECAN APHID (Mazocallis fumipennellus Fitch)

Mississippi

J. T. Kislanko (April 20): On April 11 the black pecan aphid stem mothers were observed to assume their alate form. (Stone County.)

OBSOLETE SCALE (Chrysomphalus obscurus Const.)

Louisiana

H. Baker (March): Below normal temperatures for March have delayed normal development, and while a few specimens had commenced the completion of the final molt by the first of March, appreciable numbers did not begin this development until the middle of March. A few specimens reached the adult stage before the end of the month and a few adult males emerged during the last few days of the month. Development at the end of the month was about two weeks behind that for the same period in 1930. Tropaeotella fuscigena Gir. (parasite) which emerges in small numbers during the entire year, has continued emergence in slightly increased numbers. During the later days of March a few specimens of two other species (yet undetermined) emerged.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

Mississippi

H. Dietrich (April 21): Lecanium corni is very abundant on "water oak" near Lucedale, and present generally, but not in large numbers on pecans.

CITRUS

GREEN CITRUS APHID (Aphis spiraeicola Patch)

Florida

J. R. Watson (April 21): Foliage on the orange and grapefruit trees has matured to an extent where it is out of danger of aphids. Comparatively little commercial damage has been done this year. The infestation on tangerines is rather heavy and some commercial damage may result. The Syrphus fly predator (Syrphus wiedemanni Johns.) has been unusually abundant this year; but another Syrphus fly which is usually abundant at this season of the year, Baccha clavata <sup>Tab.</sup> has been unusually scarce.

E. T. Fernald (April 25): Scarce in Orange County on citrus except on tangerines.

Mississippi

R. W. Harned (April 23): Specimens of Aphis spiraeicola on spirea were received from Brooksville, April 12.

A CITRUS APHID (Aphidae)

Texas

E. Mortensen (March 28): Citrus aphids are very injurious at Winter Haven.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

- Florida J. R. Watson (April 21): The citrus whitefly is moderately abundant. Now emerging.
- H. T. Fernald (April 25): The citrus whitefly is moderately abundant in Orange County. Fungi doing good work.
- Louisiana W. E. Hinds (April 23): The citrus whitefly is very abundant on satsumas and privets in Baton Rouge.
- Mississippi R. W. Harned and assistants (April): The citrus whitefly, although reported from practically the southern half of the State, is attracting attention only in the southern half.

PURPLE SCALE (Lepidosaphes beckii Newm.)

- Alabama J. M. Robinson (April 20): The purple scale is moderately abundant at Spring Hill.
- Mississippi R. W. Harned and assistants (April): The purple scale is being reported as moderately abundant from the southern third of the State.

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

- Florida H. T. Fernald (April 23): The Florida red scale is from moderately to very abundant. More abundant than last year in Orange County.
- J. R. Watson (April 21): The Florida red scale is moderately abundant. Crawlers are beginning to appear in numbers.

SOFT SCALE (Coccus hesperidum L.)

- Mississippi J. Milton (April 20): The soft brown scale was found to be abundant on oleander at Corinth on April 17.
- H. Dietrich (April 21): Present in small numbers on satsuma at Lucedale.

SIX-SPOTTED MITE (Tetranychus sexmaculatus Riley)

- Florida J. R. Watson (April 21): The outstanding event in the line of insect attacks on citrus during the past month has been a heavy outbreak of the six-spotted mite. It seems to be general over the entire citrus belt. Some defoliation has resulted where spraying has been neglected. The spring has been unusually wet and cool, which makes the outbreak of this mite rather surprising.

T R U C K - C R O P I N S E C T S

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi

R. W. Harned (April 23): Severe injury to mustard and rape was reported from Richton on March 25. Severe injury to turnips was reported from Hattiesburg on March 27, from Meridian on April 1, and from Polkville on April 16. A correspondent at Magee reported injury to cabbage on April 1. Severe injury to tomato plants was reported from Brookhaven on April 13, from Fayette on April 15, and from Hazelhurst on April 17. A correspondent at Liberty, Miss. sent to this office on April 21 specimens of the vegetable weevil, Listroderes obliquus, with the information that they were "ruining Irish potatoes."

Mississippi State Plant Board, Press Release (April 27): The vegetable weevil, which caused very severe damage earlier in the spring, continued its destruction through the greater part of April. At McComb this insect destroyed stands of Irish potatoes, while in Copiah and Lincoln Counties, carrots, tomatoes, and turnips were badly damaged. Complaints of serious injury from this pest were also received from Laurel, Natchez, and other places.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Virginia

H. G. Walker (April 22): The first adults observed this season were found on broccoli by Mr. L. W. Brannon on April 14. Cucumbers have not been planted in the field in the Norfolk region.

Florida

J. R. Watson (April 21): The striped cucumber beetle is very abundant in the Everglades; scarce in western Florida and absent in central Florida.

Illinois

W. P. Flint (April 20): The first adult was found April 15.

Kentucky

W. A. Price (April 22): Several specimens were found at Lexington on April 22.

Louisiana

W. E. Hinds (April 23): The striped cucumber beetle is scarce at Baton Rouge.

Mississippi

R. W. Harned and assistants (April): The striped cucumber beetle is reported as unusually abundant from the east-central part of the State. (Abstract J.A.H.)

Mississippi State Plant Board Press Release (April 13): Striped cucumber beetles are already appearing on melons in southern Mississippi and may cause serious damage.



SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

- Virginia H. G. Walker (April 22): The first adults observed this season at Norfolk were found feeding on spinach on April 3. These beetles have been scarce in the Norfolk region so far this season.
- C. R. Willey (April 24): Mr. French reports finding a single adult in narcissus blossom on April 14 in Gloucester County. While I found none myself this year I have seen them other years during narcissus inspection at blooming time, which has been around the last of March and first of April.
- North Carolina Z. P. Metcalf (April 21): The beetle is very abundant on peach, eating foliage, at Hamlet...
- South Carolina A. Lutken (April 27): The spotted cucumber beetle is scarce.
- Florida J. R. Watson (April 21): The spotted cucumber beetle is moderately abundant.
- Illinois W. P. Flint (April 20): The first adult was found April 15.
- Kentucky W. A. Price (April 22): To date we have not found the spotted cucumber beetle.
- Alabama J. M. Robinson (April 20): The southern corn root worm is moderately abundant in Auburn and Alexander City.
- Mississippi Mississippi State Plant Board, Press Release (April 27): The 12-spotted cucumber beetle was present in large numbers in George County, attacking watermelons chiefly, but also injuring turnips, cucumbers, and beans. Several other places also reported damage.
- Louisiana W. E. Hinds (April 23): Larvae were doing considerable damage to corn at Baton Rouge from about the 10th of April on.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror L.)

- Oregon T. R. Chamberlin (March 31): The first eggs from D. soror were obtained on March 10, from beetles collected in the field on March 2 in Forest Grove and vicinity. No eggs were found in the field in March although many females collected during the month seemed quite ready for oviposition. Heavy rains during the last of March have, however, hindered extended searches for eggs in the field. We have no records to date of any fields of seedling clover in the vicinity which have been destroyed by feeding of the beetles, but severe inroads have been made upon several and the final effect is yet in doubt.

California S. Lockwood (April 18): Information has just come to us that the beetle Diabrotica soror, I presume, has been responsible for considerable damage to melons around Dos Palos.

A FLEA BEETLE (Phyllotreta vittata discedens Horn)

Mississippi R. W. Harned (April 23): Flea beetles identified by J. M. Langston were reported as causing some injury to turnips at Pascagoula on April 8.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Virginia H. G. Walker (April 22): Beetles were found on volunteer potatoes near Drivers, on April 23. At present they are quite numerous on potato plants just coming through the ground at the Virginia Truck Experiment Station. The first eggs were found on April 22 by Mr. G. E. Gould.

North Carolina W. A. Thomas (April 15): Adults are unusually abundant on potatoes at Chadbourne this season and have just begun ovipositing on the foliage.

South Carolina P. K. Harrison (April 18): First specimens of the season were collected today on Irish potato on the laboratory grounds at Fairfax.

Florida J. R. Watson (April 21): There is quite a heavy infestation as far south as Alachua County.

Kansas H. R. Bryson (April 23): The Colorado potato beetle is moderately abundant at Manhattan.

Alabama J. M. Robinson (April 20): The Colorado potato beetle is moderately abundant in Auburn.

Mississippi R. W. Harned and assistants (April): The Colorado potato beetle is very abundant in the northern part of the State and moderately abundant over the remainder of the State.

Louisiana W. E. Hinds (April 23): The Colorado potato beetle is scarce at Baton Rouge.

Texas F. L. Thomas (April 10): First appearance this season of potato beetle in vicinity of Alto Lorma attacking potatoes. (April 20): The Colorado potato beetle is scarce at College Station; only two adults have been seen.

TOBACCO FLEA BEETLE (Eutrix parvula Fab.)

North Carolina W. A. Thomas (April 15): This insect was observed heavily infesting young potato plants near the laboratory at Chadbourn. The foliage is badly punctured.

Mississippi R. W. Harned (April 25): Flea beetles were reported on March 25 as causing injury to Irish potatoes at Wiggins.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Virginia H. G. Walker and G. E. Gould (April 22): The seed corn maggot is moderately abundant at Norfolk.

North Carolina W. J. Reid, Jr. (April 22): The seed corn maggot has not been so serious a pest of newly planted seed potatoes in Pamlico County this season as in the average spring. Good to excellent plant stands are being obtained in the commercial plantings. (April 18): An unusually destructive infestation of potato seed pieces by the seed corn maggot occurred in the experimental plots at the Chadbourn field laboratory. On one plot a plant stand of only 61 per cent was obtained, the missing hills being due chiefly to the insect injury. The heavy infestation is attributed to the use of large quantities of organic fertilizers and to the failure of the cut surfaces of the potato seed pieces to form a protective cork layer. A *Fusarium* decay attacked the cut surfaces of the seed and was followed by the seed-corn-maggot injury. The insect apparently hastened the spread of the fungus organism. The greater part of the larvae feeding on the seed potatoes occurred between March 15 and April 15. At the present date most of the maggots have left the seed and pupated nearby in the soil. Adults are very abundant in the field. A later planting of potatoes in an adjoining field has also been attacked. The outcome of this infestation is uncertain at the present. As many as 55 larvae were found feeding on one seed piece on April 18. These specimens are evidently of a second spring brood.

C. H. Brannon (April 20): The seed corn maggot is causing widespread damage to sprouting snap beans.

South Carolina W. J. Reid, Jr. (April 6): The seed corn maggot has apparently not been so destructive as usual to potato seed pieces near Charleston this season. Good to excellent plant stands are being obtained. Observations of the writer indicate that the larval population of the insect is considerably below normal. This condition is attributed to prolonged cold, windy weather during the usual oviposition period of the insect, and a scarcity of suitable larval food. Partly decayed organic matter in the soil constitutes



the chief food of the larvae. Unusually dry soil conditions during February and March resulted in very little decay of the organic matter in the soils at Charleston.

Texas

F. L. Thomas (April 20): The seed corn maggot is very abundant in six counties in western Texas. April 10-16: Reported causing injury to garden peas in Coleman County, to beans and corn in Shackelford County, and to corn in Knox, Concho, Tom Green, and Runnels Counties.

CABBAGE WEBWORM (Hellula undalis Fab.)

Mississippi

H. Dietrich (April 21): The imported cabbage webworm has again become very abundant on turnip greens at Lucedale so that the cannery had to suspend operations.

GREEN PEACH APHID (Myzus persicae Sulz.)

Virginia

G. E. Gould (April 22): The spinach aphid has been unusually abundant on spinach at Norfolk this spring. The fungus Entomophthora aphidis Hoff. has also been abundant and around April 5 had killed about 75 per cent of the aphids. Large quantities of spinach harvested at this time were rejected for shipment because of the leaves being plastered with live and dead aphids. Spinach harvested from April 10 to 20 was in much better shape, although the aphids were still abundant. Eggplants in the greenhouse and coldframes also have heavy infestations.

Mississippi

H. Dietrich (April 21): The spinach aphid has been very abundant on tomato plants in the hot bed at Lucedale since early April.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perty)

Alabama

J. M. Robinson (April 20): The mole cricket is moderately abundant on vegetables at Sampson.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

North Carolina

W. A. Thomas (April 16): For the past few days adults have been observed in abundance in a cabbage field near the laboratory at Chadbourn. No larvae are yet in evidence.

South Carolina

P. K. Harrison (April 2): The first specimens of the season have been collected in home gardens at Fairfax.

Kentucky W. A. Price (April 22): Adults were collected at Lexington April 18.

South Dakota H. C. Severin (April 22): Adults were seen for the first time April 13, at Brookings.

Missouri L. Haseman (April 24): During the warm days in the fore part of April cabbage butterflies appeared in great numbers over lawns and fields at Columbia, but following the cool spell throughout the latter part of April they have been little in evidence.

Mississippi G. L. Bond (April 18): The imported cabbage worm is becoming rather abundant in some fields in the vicinity of Laurel.

Nebraska M. H. Swenk (April 8): The first imported cabbage butterflies were observed flying at Lincoln April 8. (D. B. Whelan.)

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Mississippi J. P. Kislanko (April 20): The moths were observed in large numbers at Wiggins at the light traps on April 19.

H. Dietrich (April 21): Larvae and adults are very common on turnips and mustard greens in gardens at Lucedale.

North Carolina W. A. Thomas (April 22): Last week adults were very abundant in a nearby cabbage field at Chadbourn and today it was observed that a rather large population of larvae were attacking the plants.

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia G. E. Gould (April 22): The cabbage aphid is exceedingly abundant on kale and broccoli at Norfolk and is causing much damage to plants left for seed. All cruciferous crops are infested, but not so severely as kale and broccoli, which have had aphids on them since last October. A hymenopterous parasite is common in the fields and is aiding to check the aphids.

North Carolina W. A. Thomas (April 6): There has been a scarcity of this insect near Chadbourn this season, most cruciferous plants having been entirely free of aphids until recently and on this date the infestation is light.

South Carolina A. Lutken (April 27): Cabbage aphids are abundant.

Mississippi

R. W. Harned and assistants (April): The cabbage aphid was reported on cabbage from Tupelo, Lee County, in April, and on collards from Ocean Springs, Jackson County, on April 9, and was very abundant on the flowering part of collards and on mustards in Stone and Forrest Counties on April 1.

HARLEQUIN BUG (*Murgantia histrionica* Hahn)

Virginia

H. G. Walker (April 22): The first harlequin cabbage bugs observed this season at Norfolk were found feeding on kale and broccoli on April 9. These insects are quite abundant this spring.

North Carolina

W. A. Thomas (April 21): The first specimens of the harlequin bug were observed on the flower stems of turnips at Chadbourn. Ordinarily these plants would have been heavily infested at this season of the year, but for some reason there is a scarcity of this species this season.

Florida

J. R. Watson (April 21): The harlequin bug is scarce.

Alabama

J. M. Robinson (April 20): The harlequin bug is very abundant on turnips, kale, and collards at Auburn and Seal.

Mississippi

R. W. Harned and assistants (April): The harlequin bug is appearing in very large numbers over the southern half of the State but is still comparatively scarce over the northern third of the State.

STRAWBERRY

STRAWBERRY WEEVIL (*Anthonomus signatus* Say)

North Carolina

W. A. Thomas (April 15): The strawberry weevil emerged nearly two weeks later than usual owing to cold spring weather, but is now extremely active over practically all the strawberry growing area in North Carolina. The injury is much more widespread this season than usual.

Alabama

J. M. Robinson (April 20): The strawberry weevil adults were reported active at Planton and Jemison.

LESSER CORN STALK BORER (*Elasmopalpus lignosellus* Zell.)

North Carolina

W. A. Thomas (April 16): The lesser corn stalk borer is doing serious damage to first-year strawberries near Chadbourn. The outer leaves are usually attacked first and later the fruit, stems, and crown are destroyed. This insect usually appears in late July and August, when considerable damage is done, but it has never before been observed in this area, injuring strawberries this early in the spring.



STRAWBERRY ROOT APHID (Aphis forbesi Wied.)

Mississippi

R. W. Harned (April 23): Aphis forbesi on strawberry from Brookhaven, April 3.

SLUGS (Mollusca)

Kansas

H. R. Bryson (April 23): Slugs were reported injuring strawberry plants at Greensburg.

BEANS

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi

R. W. Harned (April 27): Injury to beans has been reported from several localities during the past few days.

Louisiana

W. E. Hinds (April 23): This insect is quite abundant on early snapbeans and other host plants.

MELONS

MELON APHID (Aphis gossypii Glov.)

Florida

J. R. Watson (April 21): The melon aphid is appearing on watermelons in many of the counties south of Gainesville but the infestations are not heavy as yet.

CELERY

CELERY LEAF TYER (Phlyctaenia rubigalis Guer.)

Florida

H. T. Fernald (April 25): The celery leaf tyer is moderately abundant. (K.C. Moore)

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Mississippi

H. H. Carpenter (April 20): Aphids are very abundant on turnips at Houston, Chickasaw County, and Oxford, Lafayette County.

BEET

BEET: LEAFHOPPER (Eutettix tenellus Baker)

Utah

G. F. Knowlton (April 9): The beet leafhopper is unusually abundant in Tooele County breeding areas for this time of year, and about normally abundant in some Boxelder County breeding grounds.

New Mexico

J. R. Eyer (April): Adults are very abundant and nymphs are commencing to appear.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina

C. H. Brannon (April 25): Damage to tobacco plant bed by this insect is unusually light to date in spite of the unusually cool spring.

Z. P. Metcalf (April 21): The tobacco flea beetle is very abundant in eastern North Carolina.

Florida

F. S. Chamberlin (April 14): Flea beetle emergence in Gadsden County has been later than usual this season. Only small infestations have been observed.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

GYPSY MOTH (Porthetria dispar L.)

New York

Monthly Letter of Bureau of Entomology No. 203 (March): R. Wooldridge, of the gipsy-moth laboratory, spent March 23 and 24 at an isolated gipsy-moth infestation in Milan, N.Y. Milan is about 9 miles east of the Hudson river in the so-called "Gipsy moth barrier zone." The special object of Mr. Wooldridge's trip was to secure information concerning any natural enemies that might be present in the infestation. Puparia of two tachinid flies, Compsilura concinnata Meig. and Sturmia scutellata R. D., were found. The discovery of the presence of the latter is of particular interest because the laboratory has no records of the parasite having been previously taken in New York State.

BROWN-TAIL MOTH (Lymantria phaeorrhoea Don.)

New Hampshire

P. R. Lowry (April 13): Brown-tail moth larvae are clustered on the outside of winter webs. Webs are abundant in the southern part of the State.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Alabama J. M. Robinson (April 20): Forest tent caterpillars are active in central and northern Alabama.

Louisiana W. E. Hinds (April 23): The forest tent caterpillars are very abundant in some localities in the vicinity of Springfield, Livingston Parish, and after defoliating sweet gum and willow trees they feed to some extent on oaks and wild blackberries and have this year, as in 1930, inflicted considerable damage to strawberries, by eating the flowers, as they migrate across the strawberry fields. They do not attack the fruit.

SPRING CANKER WORM (Paleacrita vernata Peck)

Pennsylvania J. R. Stear (April 22): The spring canker worm females were noted ovipositing on apple and moderately abundant on April 8, at Ligonier.

North Dakota J. A. Munro (April 18): Adults of the spring canker worm were first noticed at Fargo on April 6. Present indications would point to about the usual amount of defoliation injury to trees from this insect.

Oklahoma C. F. Stiles (April 27): Spring canker worms are quite numerous in Okmulgee County.

FALL CANKER WORM (Alsophila pometaria Harr.)

Connecticut E. P. Felt (April 24): Fall canker worm eggs are abundant, and there will presumably be a considerable outbreak by these insects in southwestern New England and southeastern New York.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

Connecticut E. P. Felt (April 24): Elm-leaf-beetle conditions were such last year as to indicate very material injury in southern New England, much of eastern New York, and presumably New Jersey and farther south.

A SHOTHOLE BORER (Scolytus multistriatus Marsh.)

Connecticut E. P. Felt (April 24): The European elm bark beetle appears to have become established in a number of localities in southwestern New England and northern New Jersey, since specimens have been received within the last five months, though in no case have these infestations been associated with serious injury. This species apparently limits itself largely to sickly or dying branches.



OAK

HICKORY PHYLLOXERA (Phylloxera caryaecaulis Fitch)

Mississippi

R. W. Harned (April 27): Hickory twigs and leaves infested with galls caused by Phylloxera caryaecaulis were received from Brookhaven on April 21.

GIANT APHID (Longistigma caryae Harr.)

Louisiana

T. E. Holloway (April 8): Dense groups of these large aphids were noted on the smaller limbs of some oak trees in New Orleans. Some winged individuals were present. The aphids were first noticed on account of the large drops of honeydew which fell on automobiles parked under the trees, making mysterious spots on the enamel.

A KERMES (Kermes lingii Chll.)

New York

E. P. Felt (April 8): A small oak twig infested with a species of Kermes, which appears to be unusually abundant on Long Island and is apparently responsible for the killing of many terminals on at least one tree. It is somewhat generally distributed, though serious infestation is presumably limited to individual trees or groups of trees.

TWO-LINED CHESTNUT BORER (Agrylus bilineatus Web.)

Connecticut

E. P. Felt (April 24): The two-lined chestnut borer may be expected to occur in considerable numbers, and very likely will increase in abundance this coming season, owing to the fact that many oaks have been weakened by drought, and in different localities by leaf-roller depredations.

PINE

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Connecticut

W. E. Britton (April 24): The pine leaf scale is in about the same abundance as usual, attacking Scotch pine and red pine.

New York

C. R. Crosby (February 23): Infested specimens of pine received from Kenmore.

W. E. Blauvelt (March 26): Infested twigs of pine were received from Rochester.

BARK BEETLES (Ips spp.)

Pennsylvania

J. W. Knull (April 22): Numerous white pines which suffered from the 1930 drought are being attacked by bark beetles, especially by the genus Ips.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine

H. B. Peirson (April 25): The white-pine weevil is abundant, emerging and mating on April 20, and at Alfred and Augusta on April 24.

POPLAR

THE HORNET MOTH (Aegeria apiforme Clerck)

Nevada

G. G. Schweis (April 21): Aegeria apiforme is present in Nevada and attacks native Fremont poplars along with Carolina poplars. At times it is quite numerous and instances have been reported that damage to local plantings of poplars has been very serious.

POPLAR BORER (Saperda calcarata Say)

Nebraska

M. H. Swenk (March): A Butler County correspondent sent specimens of larvae during the last week in March with a statement that his poplar trees were being killed by them.

TULIP

TULIPTREE SCALE (Toumeyella liriodendri Gmel.)

Connecticut

E. P. Felt (April 24): The young of the tuliptree scale are abundant in southwestern New England and southeastern New York.

I N S E C T S A F F E C T I N G G R E E N H O U S E A N D

O R N A M E N T A L P L A N T S A N D L A W N S

APHIDS (Aphidae)

Georgia

O. I. Snapp (April 20): Aphidae are causing considerable damage to ornamental plants and plantings around homes at Fort Valley.

BLACK CITRUS APHID (Toxoptera aurantii Koch)

Mississippi

J. P. Kislanko (April 2): Pittosporum in Hattiesburg is heavily infested with Toxoptera aurantii and two other species of aphid. The former is the more numerous, curling young leaves. (Stone County.)

A MARCH FLY (Bibio albipennis Say)

Nebraska

M. H. Swenk (March): During the third week in March a Saunders County correspondent sent in a quantity of larvae with a statement that they were present in his flower bed at the rate of 25 to 50 to the spadeful of soil.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Mississippi

R. W. Harned and assistants (April): Pittosporum on several properties in Hattiesburg is heavily infested with the cottony-cushion scale, April 21. The cottony-cushion scale is abundant in Laurel, Jones County, April 18.

ALDER

SPOTTED WILLOW LEAF BEETLE (Lina interrupta Fab.)

Virginia

C. R. Willey (April 24): Specimens were sent in from S. S. Lankfort, Morattico, who states that these insects are occurring in this section by "millions." He says they are perched on fishing net stakes out in the water by the thousands. The water is full of them and they are washing up on the shore. We believe it to be the spotted willow leaf beetle. (Det. by H. S. Barber. Feeds on alder normally.)

ARBORVITAE

AN APHID (Dilachnus thujaefolius Theob.)

Kansas

H. R. Bryson (April 23): This aphid has been increasing in numbers until it has reached outbreak proportions in various localities in Kansas, on arborvitae. At Manhattan the infestation was greatest about April 18. Not only has the new growth been attacked but the aphids have clustered on and attacked the larger stems and branches.

Mississippi

R. W. Harned and assistants (April): This aphid is attracting attention in the following places; Magee, Artesia, Prairie, Pheba, New Albany, Starkville, Lucedale, McComb, Corinth, Booneville, and Baldwin. (Abstract G.M.)

CEDAR

DECIDAR WEEVIL (Pissodes deodarae Hopt.)

Mississippi

R. W. Harned and assistants (April): The cedar weevil has been reported at McComb and is doing some damage in Laurel.



133  
CHRYSANTHEMUMS

CHRYSANTHEMUM APHIDS (Aphidae)

Mississippi

R. W. Harned and assistants (April): The black chrysanthemum aphid (Macrosiphoniella sanborni Gill.) is reported from various parts of the State as unusually abundant on chrysanthemum, and the green chrysanthemum aphid (Rhopalosiphum rufomaculatum Wilson) was reported on chrysanthemum from Meridian.

CHRYSANTHEMUM GALL MIDGE (Diarthronomyia hypogaea Loew)

Ohio

E. W. Mendenhall (April 18): There have been a few outbreaks of the chrysanthemum midge in greenhouses. I believe it is held pretty well in check in most of the greenhouses in Ohio, especially where plants are being shipped.

GREENHOUSE THRIPS (Heliothrips haemorrhoidalis Bouche)

Ohio

E. W. Mendenhall (April 18): I find that the greenhouse thrips is doing considerable damage to the chrysanthemums in some greenhouses in Ohio, but in the main it is held in check.

ELDER

AN APHID (Aphis sambucifoliae Fitch)

Mississippi

J. P. Kislanko (April 20): A common elderberry on one property in Hattiesburg was very heavily infested with Aphis sambucifoliae Fitch. On this day, it is estimated, approximately 50 per cent of the aphids were alates and a heavy migration took place. Several days later it was observed that only small colonies of apterae and a few alates were still present on the young shoots of the elderberry.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Connecticut

W. E. Britton (April 24): This scale seems to be increasing in abundance at Greenwich and New Haven. Attacking Euonymus radicans, E. alatus, bittersweet, and Pachysandra.

IVY SCALE (Aspidiotus hederac Vallot)

Mississippi H. Dietrich (April 21): This scale is common on fern asparagus at Lucedale.

FERN SCALE (Homichionaspis aspidistrae Sign.)

Mississippi H. Dietrich (April 21): Fern scale is still prevalent on ferns at Lucedale.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

CLOVER MITE (Bryobia praetiosa Koch)

Nebraska M. H. Swenk (April): Extremely widespread was the clover mite as a pest in houses during the first half of April. These reports came from Lancaster County, west and northwest to Frontier and Boyd Counties.

Kansas H. R. Bryson (April 23): Dr. E. G. Kelly reports slight injury by the clover mite to one field of wheat at Garden City, April 18.

CATTLE

SHORT-NOSED OX LOUSE (Haematopinus eurysternus Nitz.)

Nebraska M. H. Swenk (March 15 - April 15): A correspondent in Dawson County reported his 500 head of cattle quite badly infested with the sucking louse.

HORSES

BUFFALO GNATS (Simuliidae)

Mississippi R. W. Harned (April 12): There have been many newspaper reports in regard to the serious damage caused by the appearance of large numbers of buffalo gnats in Coahoma and Tunica Counties. The seriousness of the situation according to E. P. Krick, Monroe, La., Red Cross field representative, justifies outside assistance in scores of cases, as many of the farmers have no money to replenish their stock. Mr. Krick said a complete statement will be filed with the National Red Cross headquarters with recommendations for immediate assistance as the delta farmers are in the midst of planting and need animals

for plowing and preparing lands. He plans to visit stricken sections in Arkansas tomorrow before returning to Monroe.

(April 18): We lost about 200 mules in Coahoma County within twenty-four hours time from some kind of gnat or fly. I am very sorry that we did not collect specimens at the time that we were losing so many mules. However, the fly or gnat causing the loss of so many mules was about one-half the size of the average house fly and twice the size of the average buffalo gnat. We still have a very heavy infestation of the buffalo gnat, but this gnat is not killing the mules.

nsas

H. R. Bryson (April 23): Simulium vittatum Zett. has been causing damage to mules, cattle, and hogs south of Westmoreland. Dr. R. C. Smith reports that two dozen flies were collected from the tops of the ears of several animals. One mule near death, has badly swollen neck and head.

### POULTRY

#### CHICKEN MITE (Dermanyssus gallinae Redi)

braska

M. H. Swenk (March 15 - April 15): Poultry mites were reported as very troublesome from Otoe and Custer Counties.

### HOUSEHOLD AND STORED-PRODUCT

### INSECTS

#### TERMITES (Reticulitermes spp.)

w Hampshire

P. R. Lowry (April 16): Winged termites swarming in a heated basement room in Durham. (April 13): Termites (R. flavipes Kollar) found working outdoors around a wooden porch in Dover.

rth Carolina

R. W. Leiby (April 22): Our office is receiving an unusual number of complaints about termites, the number being probably due to the activities of a commercial exterminating company operating in the cities of Charlotte, High Point, Salisbury, and Statesville.

braska

M. H. Swenk (March 15 - April 15): Additional reports of damage by termites (R. tibialis Banks) in houses and farm buildings and at the roots of trees were received during the period here covered from Richardson, Clay, Kearney, and Furnas Counties.



Kansas

H. R. Dryson (April 23): Termites are rapidly becoming a major insect pest in Kansas. An increase in the number of reports from various sections of the State indicate that the infestations are generally distributed throughout the State. Recent reports during the past month also indicate that many public buildings are being damaged. Among those reported as infested are: Bank, theatre, high school, garage, and post office. Reports were obtained from Peabody, Atchison, Hill City, Gaylord, Hoxie and Manhattan. Termites killed young pear trees at Gaylord planted during the past two years. Numerous requests for information regarding these pests were also received during the past month.

Mississippi

Mississippi Plant Board, Press Release (April 27): With the approach of spring, scores of complaints of termites have poured into the office of the State Plant Board. Laurel, Columbus, Greenville, Starkville, Natchez, and Meridian were among the many places in the State from which damage was reported.

ANTS (Formicidae)

Utah

G. F. Knowlton (April 15): Many requests are being received concerning the control of ants in houses and gardens.

Nebraska

M. H. Swenk (April): During the first half of April many complaints were received of great swarms of winged ants (Lasius interjectus Mayr) emerging in the basement of houses. These reports came from all over the State south of the Platte River from the Missouri River to Adams County. (April 15-17): A Muckolls County correspondent reported her house badly overrun with carpenter ants (Camponotus herculeanus pennsylvanicus DeG.) under date of April 15.

BOXELDER BUG (Leptocoris trivittatus Say)

North Dakota

J. A. Munro (April 18): A number of inquiries have been received on boxelder bugs of late. The bugs have been reported as active on warm days, since the early part of April.

Idaho

C. Wakeland (April 20): Several reports of the boxelder plant bug as an annoying pest of households have been received recently from different parts of the State.

Utah

G. F. Knowlton (April 9): The boxelder bug has become scattered and is much less of a household pest at the present time than it was a week ago.

A. LONG-HORNED BEETLE (Necolitus ammiratus Fab.)

Nebraska

M. H. Svent (March): A correspondent in Washington County sent in specimens with a statement that they were emerging in large numbers from mulberry wood stored in his basement.

SILVER FISH (Lepisma saccharina L.)

North Dakota

J. A. Munro (April 18): Silver fish have been reported from several towns in the State. The reports indicate that the pest is rather abundant in basement locations and in the vicinity of books. The pest has been noticed to be fairly abundant in the basement of the Agricultural Building and the Library at the State College.

SPRINGTAILS (Collembola)

North Dakota

J. A. Munro (April 18): Specimens of springtails were received from a fox farmer at Lisbon. The letter accompanying the specimens stated that the insects had been prevalent for more than a year in a heated building used as a feed house on the fox farm. The specimens captured were taken from the surface of a pan of water sitting on the floor of the house.

A MITE (Tyroglyphus americanus Banks)

Nebraska

M. H. Svent (March 1 - April 15): During the first half of March a few reports of infestation of stored wheat with various stored-grain pests were received from the southeastern counties. From Dawson County a sample of flaxseed heavily infested with this mite was received during the first week in April.

PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from "News Letter," April, 1931

(Not for publication)

ORANGE MAGGOT (Anastrepha ludens Loew)

Mangoes brought to Matamoros from the State of Michoacan, in the southern part of Mexico, were rather heavily infested with fruit worm larvae; some 485 specimens were collected, most of which were from mangoes.

PARLATORIA DATE SCALE (Parlatoria blanchardi Targ.)

The only finding of infestation in the Coachella Valley during the month of February involved 4 palms in one of the infested plantings which has no commercial value. These palms were dug out and destroyed.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

During February, 1,064 samples, of 100 bolls each, were inspected at the laboratory with negative results. These samples had been collected in counties in Alabama, Georgia, Mississippi, and Texas.

GYPSY MOTH (Porthetria dispar L.)

All of the work in Dukes Park, N. J., was completed during the second week of February and no gypsy moth infestation was found. Dukes Park is the property where the original gypsy moth infestation consisting of over 3,000,000 egg clusters was located in 1920. Infestations have been discovered in the townships of New Marlboro, Sheffield, and Sandisfield, Mass.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

The clean-up of isolated infestations of the European corn borer on Manchester Island, Lewis County, and in Bradford Township, Bracken County, Ky., is very nearly completed.



PORTO RICO

Insect conditions during March and April, 1931.

A very heavy infestation of a beetle borer (Apate francisca Fab.) was investigated March 17 to 21 in the Barrio of Los Angeles at Lares. where about 100 coffee trees on about 1 acre had been injured. Some injured guaba trees had been cut down, and an orange, an "aguncate," and some "pomarrosa" fence posts had also been slightly injured; burrows made by the beetles were found also in two "achiote" trees. In a pigeon pea planting in the Barrio of Espinosa 50 infested plants had been cut and burned. By the first week in April on the occasion of the next visit to Lares no further injury had been reported and the outbreak had apparently almost subsided. (Mr. Sein)

The moth stalk borer (Diatraea saccharalis Fáb.) is generally much more abundant than previously because of the change of variety of cane grown, the B.H. (10) 12 now extensively grown being softer and sweeter and more susceptible to infestation. This is despite the rather general adoption of nonburning of trash, which favors Trichogramma. Of course the trash must be burned in preparing the land for planting, and as less cane is ratooned, the areas in which trash is left on the fields are more limited in extent, especially on the south coast. (G.N.Wolcott)

In the region on the south coast between Ponce and Guayama, white grubs (Phyllophaga portoricensis Smyth) have been much less abundant since the hurricane in 1928 than they were previously, and the same is also true of the weevil root-stalk borer, Diaprepes abbreviatus L. Mr. Osborn has reared two previously unknown egg parasites of the latter, but the parasite situation, so far as white grubs is concerned, is unchanged. Cultivation practices, however, have been greatly changed, about two-thirds of the area being plant cane, and only about one-third is ratoon. Subsoiling with steam plows is standard practice now, which definitely kills grubs by crushing them, while with less thorough preparation only grubs actually cut by the plowshares were killed. Rainfall has been much more abundant, which possibly may have had some effect. (G.N.Wolcott)

Reports and observations indicate that the tobacco leaf-miner (Phthorimaea operculella Zell.) has been doing considerable damage, more so than usual, to fields of tobacco in Comerio and Caguas, and also in one 3-acre field near Rio Piedras. Unusually dry weather is undoubtedly the cause. (M. D. Leonard)

A light infestation of the red-striped sugarcane scale (Pulvinaria iceryi Guer.) on the leaves of some sugarcane plants grown in one of the greenhouses of the Insular Experiment Station at Rio Piedras was found on March 26. (M. D. Leonard)

A large citrus grower reported that about one-third of 30,000 grapefruit seedlings in his nursery at Bayamon had been killed by white

grubs (Phyllophaga, probably citri Smyth) (M. D. Leonard.)

A light infestation of the lima bean pod borer (Maruca testulalis Geyer) on blossoms and pods of lima beans in a 2-acre planting at Juana Diaz was observed on March 13. (A. S. Mills.)

A leaf beetle (Ceratoma denticornis Fab.) was fairly common on the string bean plots at the Experiment Station at Rio Piedras, but doing little damage. (M. D. Leonard.)

A leaf beetle (Diabrotica graminea Baly) was reported by Pedro Osuna of the Insular Experiment Station as fairly abundant on about 1 acre of Irish potatoes at Comerio and on about 5 acres at Adjuntas, early in March. This insect was also reported by A. S. Mills as moderately infesting a 1-acre planting of okra at Trujillo Alto on March 27, the beetles feeding on both leaves and flower buds. (M. D. Leonard.)

The potato flea beetle (Eotrix cucumeris Harr.) was present in increasing numbers during January and February and very injurious in March in several fields of potatoes in Comerio, Adjuntas, Cidra, Caguas, and Rio Piedras, according to Pedro Osuna, of the Insular Experiment Station. (M. D. Leonard.)

Under date of March 19 a report was received from Humacao saying that considerable damage was being done to plantings of sweet potato there by Cylas formicarius Fab. (M. D. Leonard.)

A leafhopper, Emponasca jabanae DeLong, was abundant on string beans in experimental plots at the Insular Experiment Station at Rio Piedras throughout the month, becoming more destructive towards harvesting at the end of the month. (M. D. Leonard.)

A small garden patch of Irish potatoes was reported by Pedro Osuna as badly infested by Myzus persicae Sulz. on March 31; many of the leaves were curled. (M. D. Leonard.)

Specimens of a bug, Spartocera batatas Fab., were received for determination from Utuado from Agricultural Agent A. Correa, who stated under date of March 20 that they were injuring the experimental plots of Irish potatoes. This is apparently the first report of injury to Irish potatoes by this insect in Porto Rico. (M. D. Leonard.)

Mr. E. F. Roarke of the San Juan Ginnery Company reports that the cotton leaf worm (Alabama argillacea Hbn.) was starting to work in one field of cotton at Isabela. This is the first infestation observed on the north coast in this year's crop. No infestations were reported during March for the south coast. (M. D. Leonard.)

Counts made on the pink boll worm (Pectinophora gossypiella Saund.) by several of the local agricultural agents on the south coast, examining



100 mature but unopened bolls in each field, showed the following percentages of infestation:

March 10, Lajas (3 fields) 85 per cent, 18 per cent, 24 per cent  
March 10, Sabana Grande (1 field) 16 per cent  
March 10, San German (1 field) 38 per cent  
March 11, Cabo Rojo (2 fields) 80 per cent, 84 per cent

Heavy infestations by Dysdercus andreae L. were reported by Messrs. Mills and Faxon of the Plant Quarantine and Control Administration in fields of cotton at Ponce, Guayanilla, and Penuelas on March 13, (April 16): The pink boll worm is becoming more abundant on the south coast. (M. D. Leonard.)

### CUBA

Notes on observations during March and April, 1931.

By U. C. & Loftin.

On March 15 we received a complaint that cane was being damaged at Central Cuba, Mantanzas Province. The insects proved to be Cirphis latiuscula H. S.. and an undetermined Lepidopterous larva. On March 30 another complaint was received from Central Socorro that C. latiuscula was damaging cane. This is unusually early in the season for the grassworms, as they generally do not become abundant enough to attract attention until after the beginning of the rainy season, or in the latter part of May or early June.

A field of velvetbeans on the Station grounds at Central Baragua that were planted last November are nearly mature and are being turned under for green manure. A very light infestation of the velvetbean caterpillar (Anticarsia gemmatilis Hbn.) was noticed last December, but since that time the beans have not been attacked by this pest.

On March 19 young corn at Central Jaronu, Camaguey Province, was heavily infested and badly damaged by Laphygma frugiperda S. and A.



Notes on Hemiptera and Homoptera  
at Canton, Kwangtung Province, Southern China

1924-1929 1

by Wm. E. Hoffman  
Professor of Biology, Lingnan University, Canton, China

Note: The food plants of each of the species named below are listed in the order of preference as indicated by field observation to date. Except where otherwise noted, the plants are known to be food plants.

I. Plataspidae

1. Brachynotus subaeneus Westw. 2

1. Lima bean, "Min tau" (Phaseolus lunatus L.); common.
2. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.); common.
- 3-4. Two other species of cultivated beans.  
Mr. Wall reported it on beans called "Ng uet tau" and "Paet uet tau."

2. Coptosoma punctatissima Mont.?

1. Lima bean, "Min tau" (Phaseolus lunatus L.); common, perhaps only a minor pest.

3. Coptosoma variegatum H. S.

Found on the following plants, and although feeding is difficult to observe, it is believed that the bug feeds on all those listed, with the possible exception of Zea mays. It also feeds on some unidentified plants.

1. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.).
2. Species of Convolvulaceae.
3. Common nightshade, "Paak fa ts'oi" (Solanum nigrum L.).

- 1 Contribution from the Department of Biology, Lingnan University.
- 2 The writer is indebted to Mr. W. E. China for naming most of the species discussed in this paper.

4. Sweetpea (Lathyrus odoratus L.).
5. Royal Poinciana, "Kai fung shue" (Delonix regia (Boj.) Raf.).
6. "Ying shue" (Albizia chinensis (Osbeck) Merr.).
7. Pigeon pea, "Muk tau" (Cajanus cajan (L.) Millsp.) (= Cajanus indicus Spreng.).
8. "Faak yuk laan (white jade orchid)" (Michelia champaca L.).
9. Morning-glory (Ipomoea purpurea Roth.).
10. Chrysanthemum (Chrysanthemum sp.).
11. Lima bean, "Min tau" (Phaseolus lunatus L.).
12. A third species of cultivated bean.
13. Asparagus (Asparagus officinalis L.).
14. Dock (Rumex sp.).
15. Pummelo, "Foh luk" or "Yau tsz" (Citrus maxima (Burn.) Merr.).
16. Hibiscus (Hibiscus rosa-sinensis L.).
17. Poinsettia (Poinsettia sp.).
18. Corn, maize, "Suk mai" (Zea mays L.).

## II. Cydnidae

1. Cydnus indicus Westw.

Common in Canton. Nothing known concerning its habits. Frequently comes to lights at night.

2. Geotomus pygmaeus Dall.

Taken at lights at Nadoa, Hainan Island.

## III. Pentatomidae 1

1. Cantao ocellatus Thunb.

A forest-inhabiting species feeding upon the fruits of various trees. Abundant at Nadoa, Hainan Island.

2. Poecilocoris druriei (L.).

1. "Shui mong."

At times very numerous. Feeds on the fruits of this tree which is grown as an ornamental. Said to be a minor pest on mulberry in Formosa but never found on that tree at Canton.

- 1 Notes relating to the geographical distribution, biology, and bionomics of some of the species of Pentatomidae discussed herein were given in a paper entitled "Notes on the bionomics of some oriental Pentatomidae (Hemiptera)" read by the writer at the 11th International Congress of Zoology, Padua, Italy, 1930, and now in press in the proceedings of that Congress.

3. Chrysoceris grandis Thunb., var baro Fab.

1. "Chin mai chik shue."
2. "Shui yung."
3. "Paa' yukt laan (white jade orchid)" (Michelia champaca L.).
4. Gardenia sp.  
Not numerous.

4. Scotinophara lurida (Burn.).

Not abundant in the vicinity of Canton. A minor pest on rice.

1. Rice, "Joh" (Oryza sativa L.).
2. Grasses.

5. Erthesina fullo (Thunb.).

In Kwangtung found feeding on the trunks and larger branches of 31 species of trees representing about as many families. A minor pest. I

6. Halyabbas unicolor Dist.

Feeds on bamboo stems but is not abundant enough to be considered a pest. Usually found on the variety of bamboo known as "Lak chuk."

7. Campona tanrobanensis Dall.

Not common in the vicinity of Canton. At times a minor pest.

1. Pummelo, "Poh luk" or "Yau tsz" (Citrus maxima (Burn.) Merr.).

8. Halyomorpha vicus (Fab.).

Feeds by preference on beans (feeding on all parts of the plant) and is a pest of considerable importance. 2

1. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.).
2. Lima bean, "Min tau" (Phaseolus lunatus L.).
3. Common nightshade, "Paak fa ts'oi" (Solanum nigrum L.).
4. Hibiscus (Hibiscus rosa-sinensis L.).
5. Prince's feather (Colosia cristata L.).
6. "T'ang ts'oi" (Basella rubra L.).
7. An unidentified species of cultivated bean.

1 For further information, including life history notes, see Lingnan Science Journal 9 (1 and 2): 139-142, 1 fig. 1930.

2 A paper on this bug by the writer appeared in Peking Nat. Hist. Bull. 5 (pt. 2): 25 and 26, 1 pl. March, 1931.



9. Tolumia latipes Dall.

1. Nightshade, "Paak fa ts'oi"; feeds on fruits.
2. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.).
3. Wild shrub (fruits).

10. Eysarcoris guttiger Thunb.

Minor pest on Phaseolus and Vigna.

1. Common nightshade, "Paak fa ts'oi" (Solanum nigrum L.).
2. Lima bean, "Min tau" (Phaseolus lunatus L.); feeds on pods.
3. "Lo fu lei (tiger's tongue)" (Polygonum perfoliatum L.).
4. "T'ang ts'oi", Basella rubra L.
5. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.).
6. Prince's feather (Celosia cristata L.).
7. "Kam poon ngan chan" (Bidens chinensis Willd.).
8. Egg plant, "Ai kwa" (Solanum melongena L.).
9. Corn, maize, "Suk mai" (Zea mays L.).

11. Agonoscellis nubila Fab.

Found on several plants not yet identified. Not numerous. Reported very numerous at Foochow in Fukien Province by Prof. C. R. Kellogg.

12. Eurydema pulchrum Westw.

At least a minor pest on "Kaai laan" (Brassica sp.), feeding on stems and seed pods.

1. "Kaai laan" (Brassica sp.).
2. Cauliflower "Ye ts'oi fa" (Brassica oleracea L., var. botrytis L.).
3. Kohl rabi (Brassica caulorapa Pasq.).
4. Lettuce, "Shaang ts'oi" (Lactuca sativa L.).
5. "Lo fu lei (tiger's tongue)" (Polygonum perfoliatum L.).
6. "Yeung pin ts'oi" (Emilia sonchifolia (L.) DC.). A Chinese drug plant.
7. "Paak ts'oi" (Brassica chinensis L.).

13. Bagrada sp., probably picta Fab.

Feeding and breeding in large numbers on an unidentified tree near Nodda, Hainan, in early July, 1929.

14. Catacanthus incarnatus Drury.

Feeds on several species of plants at Canton and in Hainan. At Depok, near Buitenzorg, Java, I found it feeding on Ixora nigrescens.

15. Nezara viridula L.

This species feeds on well over 100 species of plants representing at least twenty-nine families of monocotyledonous and dicotyledonous plants. Pest on Phaseolus and Vigna.

1. Common nightshade, "Paak fa ts'oi" (Solanum nigrum L.).
2. Lima bean, "Min tau" (Phaseolus lunatus L.).
3. Chinese long bean, "Tau kot" (Vigna sesquipedalis L.).
4. A third species of cultivated bean.
5. Corn, maize, or "Suk mai" (Zea mays L.).
6. Canna (Canna sp.).
7. "Pulwa (bitter melon)" (Momordica charantia L.).
8. "Kaai laan" (Brassica sp.).
9. Polygonum sp.
10. Morning-glory (Ipomoea purpurea Roth.).

16. Plautia fimbriata (Fab.).

Pest on Vigna sesquipedalis L.; minor pest on Phaseolus lunatus L.

1. Chinese long bean, "Tau kot" (Vigna sesquipedalis L.).
2. Common nightshade, "Paak fa ts'oi" (Solanum nigrum L.).
3. Lima bean, "Min tau" (Phaseolus lunatus L.).
4. Canna (Canna sp.).
5. "T'ang ts'oi" (Basella rubra L.).
6. Chrysanthemum (Chrysanthemum sp.).
7. Morning glory (Ipomoea purpurea Roth.).
8. "Kaai laan" (Brassica sp.); in laboratory only.

17. Critheus lineatifrons Stal.

Found on one species of bamboo only. Destroyed most of the new culms during 1926. Specimens scarce during 1928. During 1927 and 1929 no observations were made.

1. Bamboo.

18. Antestia anchora Thunb.

Taken in Hainan by our expedition in 1929 but food plants not ascertained.

19. Menida formosa Westw.

Taken in many localities in Hainan Island.

20. Menida histrio Fab.

During the spring and summer of 1928 this species was very numerous on corn and was at least a minor pest. There is a reason to believe that it feeds also on a species of ornamental hedge, commonly grown on Lingnan University campus. Both nymphs and adults feed on the

leaves and stems of bamboo and also on the larvae of a chrysomelid beetle which skeletonizes bamboo.

1. Corn, maize, "Sui mai" (Zea mays L.). Feeds on developing grain.
  2. Bamboo, "Chuk."
- Also carnivorous.

21. Piezodorus rubrofasciatus Fab.

At least a minor pest in Kwangtung Province and Hainan Island.

1. Chinese long bean, "Tau kolt" (Vigna sesquipedalis L.).

22. Rhynchoscoris humeralis Thunb.

On several species and varieties of oranges, feeding on the fruits in all stages of development from the very small green ones to over-ripe ones, thus causing the fruits to drop from the trees. It was impossible to ascertain the exact name of the food plant in many cases, with the result that the forms named below constitute only a partial list.

1. "Kam kwat" (Fortunella margarita (Lour.) Swingle).
2. "Kam kwat" (Fortunella japonica (Thunb.) Swingle).
3. "Sz kwai kwat" (Citrus microcarpa Bunge) (C. mitis Blanco).
4. Mandarin orange (Citrus nobilis var. deliciosa Swingle).
5. Sweet orange, "Ch'iu chan ch'ang" (Citrus sinensis Osbeck).

Further information on this pentatomid may be secured by referring to the following notes by the writer: "A stink-bug injurious to Citrus in South China." Iroc. Third Pan-Pacific Sci. Congress, Tokyo, 1926: 2030-2038 (1929). "The life History of Rhynchoscoris humeralis Thunb. (Hemiptera, Pentatomidae). Lingnan Science Journal 7:817-823, 2 plates, 1929 (1931).

23. Cantheconidea furcellata Wolff.

Apparently primarily carnivorous but also feeds on plants.

1. Tallow tree, "Oo k'au shue" (Sapium sebiferum (L.) Roxb.) on leaf.
2. Sweet potato, "Faan shue" (Ipomoea batatas (L.) Poir). On leaf. Found feeding on lepidopterous larvae affecting banyan, Sapium sebiferum, Phascolus lunatus, and chrysomelid larvae feeding on bamboo and sweet potato. The latter larvae are Metritona circumdata Hbst.

24. Andrallus spinidens Fab.

Carnivorous as far as our observations go. The nymphs, deep blue or purplish in color, feed on various caterpillars.



25. Tessaratomia nanillosa Drury.

Causes thousands of dollars of damage annually to the lychee crop in Kwangtung Province. 1

1. Lychee, "Lai chi" (Litchi chinensis Sonn.).
2. Lungan, "Lung ngaan (dragon's-eye)" (Eurhoria longana Lam.).

26. Vitruvius insignis Dist.

On bamboo in Hainan Island. Minor pest. Feeds on terminal branches.

27. Aspongopus fuscus Westw.

This stink bug is a serious pest on cucurbits and castor oil bean, and a minor pest on lima bean.

1. Squash, "Kam kwa" (Cucurbita maxima Duch.).
2. Cucumber, "Tong kwa" (Cucumis sativa L.).
3. Bottle gourd, "Too lo kwa" (Lagenaria vulgaris Ser.).
4. Castor oil bean (Ricinus communis L.).
5. Lima bean, "Min tau" (Phaseolus lunatus L.).

28. Megymenum (Pseudaradus) brevicornis (Fab.).

Often found in association with Aspongopus fuscus Westw., and constitutes a serious pest on cucurbits and the Chinese long bean.

It feeds over between vegetable crops on escaped individuals of, Celosia cristata L.

1. Cucumber, "Tong kwa" (Cucumis sativus L.).
2. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.).
3. Bottle gourd, "Too lo kwa" (Lagenaria vulgaris Ser.).
4. Squash, "Kam kwa" (Cucurbita maxima Duch.).
5. Prince's feather (Celosia cristata L.).
6. "Hung Fung sin fa" (Impatiens balsamia L.).
7. Lima bean, "Min tau" (Phaseolus lunatus L.).

29. Diplorhinus furcatus Westw.

Taken in the interior of Hainan on low-growing herbs.

- 1 Mr. R. B. Falkenstein, formerly connected with the biology department of Lingnan University, made an extensive study of this bug and has a lengthy report on the same now in press (Lingnan Science Journal).

30. Megarrhamphus hastatus Fab.

Occurs in grass on White Cloud Mountain at Canton and on Ling Fa Ling (Mountain) in Hainan.

31. Microdeutorus megacephalus H. S.

Taken at lights in Hainan in June.

IV. Urostylidae

1. Urostylis sp.

Found among grass and herbs on mountains in central part of Hainan Island.

V. Coreidae

1. Mictus serina Dall.

1. "Yau ko" (Litsea glutinosa (Lour.) C. B. Rob.).
2. Litsea polyantha Juss.
3. Psychotria sp.
4. "Shek paan shue" (Stranvaesia benthameana (Hance) Merr.).
5. "Lak t'ong" (Zanthophyllum sp.).

Another species of Mictus was taken at Nodda, Hainan Island.

2. Anoplocnemis phasiana Fab.

This bug is a serious pest on the first seven plants named below. It has been found only occasionally on the remainder of the plants in the list.

1. Lima bean, "Min tau" (Phaseolus lunatus L.).
2. Chinese long bean, "Tau kok" (Vigna sesquipedalis L.).
3. A third species of cultivated bean.
4. Cat-tail tree or "Manu mei muk" (Dolichandrone cauda-felina Benth. & Hook.).
5. Cassia nodosa Buch.-Ham.
6. Pigeon pea, "Muk tau" (Cajanus cajan (L.) Millsp.) (= Cajanus indicus Strengh.).
7. Hibiscus (Hibiscus rosa-sinensis L.).
8. Peanut, ground nut, or "Fa shaang" (Arachis hypogaea L.).
9. Bamboo, "Chuk".
10. "Hop foon shue" (Albizia lebbek (L.) Benth.).
11. Amaranthus sp.
12. Guava (Isidium guajava L.).

A rather full discussion of this species by the writer is now in press in Lingnan Science Journal. A. binotata Dist. was taken by our expedition in the mountains at Yuen Moon, Hainan Island.

3. Homococcus (Anacanthocoris) stricornis (Scott).

1. "Hoy foon shue" (Albizzia lebbek (L.) Benth.). Minor pest.
2. "Ying shue" (Albizzia chinensis (Osbeck) Merr.). Minor pest.

4. Homococcus (Tagus) walkeri (Kirby).

1. "Ying shue" (Albizzia chinensis (Osbeck) Merr.). Pest.
  2. "Hoy foon shue" (Albizzia lebbek (L.) Benth.). Minor pest.
- A species near H. graninis Fab. was taken at Nodda, Hainan.

5. Notobitus sp.

Serious pest on several species of bamboo. Feeds on new culms.  
Fed on pods of Vigna sesquipedalis L. in laboratory.

6. Cloresmus modestus Dist.

1. Bamboo, "Chuk"

Minor pest feeding on new culms, not abundant.

7. Hygia opacus Uhl.

1. Morning-glory (Ipomoea purpurea Roth.).

8. Acanthocoris scaber L.

Very serious pest every year on cape gooseberry and peppers. Frequently does much damage to eggplant and squash.

1. Cape gooseberry, "Tang lung kwoh" (Physalis peruviana L.).
2. Nightshade or "Faak fa ts'oi" (Solanum nigrum L.).
3. Morning-glory (Ipomoea purpurea Roth.).
4. Cayenne pepper (Capsicum annum L.).
5. Pepper (Capsicum sp.).
6. Eggplant, "Ai kwa" (Solanum melongena L.).
7. Squash, "Kam kwa" (Cucurbita maxima Duch.).
8. "Yeung so hing" (Cestrum nocturnum L.).
9. "Taai lo shan" (Solanum torvum Sw.).

For detailed information concerning the life history, economic status, etc., see Hoffmann: "Notes on a squash-bug of economic importance." Lingnan Sci. Journ. 5 (3): 281-292, 2 pl. 1927. (1929)

9. Elinachtus sp.

1. "Lo fu lei (tiger's tongue)" (Polygonum perfoliatum L.).
2. Prince's feather (Celosia cristata L.).



10. Cictus bimunctatus H. S.

11. Cictus punctiger Dell.

Our food-plant records were not always kept distinct for these two species. Specimens of this genus have frequently been observed feeding and breeding on Celosia cristata L. and Polygonum perfoliatum L.

The food list is as follows:

1. "Lo fu lei (tiger's tongue)" (Polygonum perfoliatum L.).
2. Prince's feather (Celosia cristata L.).
3. Chenopodium sp.
4. Polygonum sp.
5. Lima bean, "Min tau" (Phaseolus lunatus L.).
6. Chinese long bean, "Tau k'oh" (Vigna sesquipedalis L.).
7. A third kind of cultivated bean.
8. Canna (Canna sp.).
9. Cape gooseberry "Tang lung kw'oh" (Physalis peruviana L.).
10. Corn, maize, "Suk mai" (Zea mays L.).
11. Eggplant, "Ai kwa" (Solanum melongena L.).
12. "Tsz koo" (Sagittaria sagittifolia L.).

12. Clavigralla horrens Dohrn.

1. Lima beans, "Min tau" (Phaseolus lunatus L.).  
Not very common. Found also in Hainan Island.

13. Lentocoris acuta (Thunb.).

14. Lentocoris varicornis Fieb.

15. Lentocoris sp.

Our food-plant records were not always kept distinct for these three species.

1. Rice, "Joh" (Oryza sativa L.).
2. Prince's feather (Celosia cristata L.).
3. Common nightshade, "T'au fa ts'oi" (Solanum nigrum L.).
4. Grasses.
5. Corn, maize, "Suk mai" (Zea mays L.).

16. Riptortus linearis Fieb.

17. Riptortus pedestris

18. Riptortus sp.

Food-plant records were not kept separately for the first two species. The last named is a very small species and has been found feeding and breeding on but one species of plant, a wild legume with yellow flowers.

1. Lima bean, "An tau" (Phaseolus lunatus L.).
  2. Chinese long bean, "Tai ko'-" (Vigna sesquipedalis L.).
  3. Third species of cultivated bean.
  4. "Ngan hoy foon" (Leucaena glauca Benth.).
  5. Common nightshade, "Taa' fa ts'oi" (Solanum nigrum L.).
  6. Peanut, ground nut, or "Fa shaang" (Arachis hypogaea L.).
19. Daclera sp.
1. "Hor foon shue" (Albizzia lebbek (L.) Benth.). In pods.
20. Lentocoris abdominalis Fab.

Taken by our expedition in Hainan Island.

#### VI. Lygaeidae

1. Lygaeis hosnes F.
  1. Common nightshade, "Taa' fa ts'oi" (Solanum nigrum L.).
  2. Cape gooseberry, "Tang lung kwoh" (Physalis peruviana L.).
  3. A Chinese drug plant, "Yeung piu ts'oi" (Emilia sonchifolia L.).
  4. Wild legume with yellow flowers.
2. Grantostethus servus Fab.
  1. Morning-glory (Ipomoea purpurea Roth.). A species near to G. servus is also found at Canton.
3. Nysius sp.
  1. Prince's feather (Celosia cristata L.). Abundant, feeding and breeding on this plant. The bugs puncture the seeds. A species of Nysius has also been found on Solanum nigrum.
4. Anhanus sordidus Fab.
  1. Common nightshade, "Taa' fa ts'oi" (Solanum nigrum L.). Common. Feeds and breeds on this plant and has not been taken on any other plant. Also taken in Hainan Island (at lights).
5. Miscellaneous lygaeids.
  - 1-3. Orthaea (Tanera) nietneri Dohrn, O. vincta Say., O. vitalisi, O. punctulata Motsch.? and Macrones sp. are also found in Canton, while Dinonachus rhacinus Dist., Dienches femoralis

Dohrn, and Caenocoris sanguinarius Stal are found at Nodda, Hainan, and undoubtedly occur in the vicinity of Canton as well. Dinomachus rhacinis and Dienches fernalis were taken at lights.

## VII. Pyrrhocoridae

### 1. Dysdercus megalonygus Bredd.?

1. Cotton (Gossypium sp.).
2. Hollyhock (Althaea rosea Cav.).
3. Roselle (Hibiscus sabdariffa L.).
4. "Fu yung fa" (Hibiscus mutabilis L.).
5. "Chi tau poh" (Urena lobata L.).

Common on cotton and roselle. Found also in Hainan Island but record of host plants not secured. Dindynus sanguineus Fab. also taken in Hainan. What appears to be a third species of pyrrhocorid was found feeding and breeding on "Mong fa" (Hibiscus tiliaceus L.) in late October (1928) at Taiwo Market, New Territory, Kwangtung Province.

## VIII. Tingitidae

### 1. Sterhanitis nyrioides Scott.

1. Azalea.

## IX. Miridae

### 1. Deraeocoris sp.

1. Tallow tree, "Oo M'au shue" (Sapium sebiferum (L.) Roxb.).
- Mirids, not yet determined, occur in numbers on Albizzia chinensis (Osbeck) Merr. and a cultivated species of Chrysanthemum. Unidentified species of mirids occur on Albizzia chinensis (Osbeck) Merr., Vigna sesquipedalis L., Phaseolus lunatus L., Cucumis sativus L., and Solanum nigrum L.

## X. Cicadidae

### 1. Flatypleura hilna Walk.

Commonly taken on Acacia, "T'oi waan saung sz shue" (Acacia confusa Merr.).

The species enumerated below were taken in Hainan by our expedition in 1929:

1. Flatypleura hilna Walk.
2. Pomtonia sp. near fusca Oliv.



3. Dundubia longina Dist.?
4. Huechys sanguinea DeG.
5. Huechys sanguinea var. philaenata Fab.
6. Muda virguncula Walk.

#### XI. Cercopidae

##### 1. Cosmoscarta bimaculata Walk.

1. Banana, "Tsiu" (Musca sp.).
2. Canna, (Canna sp.).
3. Chinese long bean, "Tau ko'e" (Vigna sesquipedalis L.).
4. Grape (Vitis vinifera L.).
5. "Iaak yuk laan (white jade orchid)" (Michelia champaca L.).
6. Scissors grass, "Kaaui tsin ts'o" (Belamcanda chinensis L. DC.).
7. Eucalyptus (Eucalyptus robusta Smith).
8. Gardenia sp.
9. Bamboo, "Chuk".

The above feeding records refer to the adults. No information is at hand regarding the food habits of the nymphs which feed on the underground parts of plants and probably are pests of some importance. This species is also found in Hainan.

##### 2. Clovina puncta Walk.

Very abundant. Host plants not known.

#### XII. Cicadellidae

The following have been taken at Canton but host plants were not recorded

1. Drabescus sp., near angulatus Sign.
2. Nephotettix bimaculatus Fab.
3. Tettigoniella ferruginea Fab.
4. Goniagnathus punctifer Walk.
5. Selenocerhalus sp.
6. Bythoscopus sp.
7. Athysanus sp.
8. Aconura sp.?
9. Deltocerhalus sp.
- 10-11. Parabolocetratus spp.  
T. ferruginea also taken in the mountains of Hainan Island.

XIII. Fulgoridae

1. Proutista moesta Westw.

1. Sugar cane, "Che" (Saccharum officinarum L.).

Found feeding on the leaves of sugar cane in Hainan Island during 1929 by the members of the Lingnan University 5th Hainan Island Expedition. This species also occurs in India, Java, and the Philippines. (Identified by Mr. T. W. Onan.)

2. Fulgora candelaria L. (Lung ngaan kai (Lungan chicken))."

1. Tallow tree, "Oo H'au shue" (Sapium sebiferum L. Roxb.).

Quite common but remains too high on the trees to permit observation of feeding habits. Also found in Hainan.

XIV. Flatidae

1. Salurnis marginellus Guer.

1. Orange.

XV. Delphacidae

1. Tronidocenhala (Smara) atrata Dist.

Host plant not known.





THE INSECT PEST SURVEY  
BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

June 1, 1931.

Number 4

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING



# INSECT PEST SURVEY BULLETIN

Vol. 11

June 1, 1931

No. 4

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR May, 1931.

Probably the most serious insect development of the month is the severe armyworm outbreak occurring over 11 counties in north central Texas. A similar outbreak is under way in Mississippi and Kentucky with lesser outbreaks in eastern Arkansas and the eastern shore of Virginia.

Cutworms seem to be unusually prevalent along the Atlantic Seaboard. These insects are also very troublesome this spring in the East Central States, and westward to Montana, the Dakotas, and Nebraska. The remainder of the country is experiencing about the normal cutworm damage.

During the first week in May grasshopper eggs were found to be very numerous in South Dakota and at that time began hatching in Montana and Nebraska. By the third week in the month, hatching was reported from the Great Basin. The Salt River Valley of Arizona and the Antelope Valley and the Klamath Lake district of California are having localized grasshopper outbreaks.

Owing to the cool weather of late spring considerable wireworm injury was reported from scattered localities throughout the United States.

As a whole, the Hessian fly situation does not seem to be alarming, although Illinois reports that from 32 to 40 per cent of the tillers are infested in certain fields.

The chinch bug situation in Illinois, Missouri, and parts of Kansas appears to be rather serious. Large numbers of the bugs are in the fields, and in some cases in Illinois are killing wheat, while in Kansas reports of the killing of a lot of oats by this insect have been received.

The corn ear worm is commencing to appear in destructive numbers in the Gulf States.



A very unusual and severe attack of one of the tiger moths (*Apantesis phalerata* Harr.) is reported from south-central Tennessee. The Lincoln County agent estimates that in that county alone 500 acres of corn are destroyed, and many pastures are completely stripped of vegetation.

The alfalfa weevil is so abundant in western Nevada as to necessitate control measures.

During the latter half of the month codling moth adults were emerging in the Middle Atlantic States. In the southern part of this section the emergence is considerably later than last year. In the Eastern Central States winter survival seems to be somewhat higher than last year, and emergence in this section occurring at about the same time as last year. In the Pacific Northwest emergence occurred during the first week of May, while in California the peak of emergence in the Antelope Valley was on April 10.

The fruit aphid situation has not materially changed since last month. The rosy aphid and apple grain aphid increased slightly in abundance toward the end of the month.

Apple leafhoppers continue to be unusually numerous in New England, and are doing serious damage in the Hudson River Valley in New York State.

A rather unusual outbreak of the striped cucumber beetle as an apple pest has developed in Mississippi. This was first observed last year when this insect, by feeding on the blossoms, ruined a large part of the crop in the northeastern part of the State. This year the insect has again attacked the blossoms but not so seriously as last year.

The European red mite started hatching during the first week in May in New England and the Middle Atlantic States. Abundance does not seem to be unusual.

The oriental fruit moth on <sup>the</sup> whole does not seem to be unusually abundant in its range this season.

The plum curculio is not abnormally abundant throughout the New England, Middle Atlantic, and South Atlantic sections. On the whole emergence is later than usual, and in Georgia the infestation is the lightest in the past 13 years.

The grape leafhopper is <sup>reported</sup> as unusually abundant in southern New Jersey and in eastern Virginia.

Heavy infestation of pecan by the hickory phylloxera was reported from the Gulf section and this insect was doing serious damage to trees in Louisiana.

The pecan case bearer was very injurious during the first half of the month in Mississippi and Texas.

The infestation of the six-spotted mite in Florida, reported in the last number of the Insect Pest Survey Bulletin, is rapidly decreasing, apparently owing to a fungus disease.

By the middle of the month the striped cucumber beetle put in its appearance in the southern part of the Middle Atlantic States, and was recorded as quite generally abundant and destructive throughout the eastern part of the United States, westward to Nebraska, Oklahoma, and Mississippi.

The first adult of the spotted cucumber beetle was observed in Maryland on April 5, and in Kansas on May 19.

Flea beetles on truck crops occasioned considerable injury in New York and New Jersey.

During the cool weather of May the seed-corn maggot did considerable damage to bean and cucumber seed in Virginia, to corn and beans in Illinois, and to similar crops in Kentucky, Missouri, parts of Kansas, and Utah.

The potato tuber worm has been unusually abundant in parts of Los Angeles County, Calif., this year, and was reported from stored potatoes at Newark, Del.

By the middle of the month reports of serious infestation by the cabbage aphid were received from New Jersey, Virginia, Ohio, and Indiana. In some cases the infestations are suspected as having originated on plants shipped from the South. Very heavy infestations of cabbage by the cabbage aphid were also reported from Mississippi.

Rather heavy infestations of the harlequin bug were reported from the southern tip of New Jersey during the month. In the Norfolk district of Virginia eggs of this insect were numerous in the field during the last week in April, and the first nymphs were observed on May 12.

The State Plant Board of Mississippi reports that the strawberry weevil was found seriously infesting strawberries in the southeastern part of the State. This is the first record of this insect in Mississippi.

During the last week in May the Mexican bean beetle appeared in the fields in the southern part of New Jersey, and on the eastern shore of Maryland. During the first week in the month the insect was observed in the Norfolk district of Virginia. This insect is causing considerable damage at the present time in North Carolina and has extended its range southward to Albany, Ga. Except for the isolated infestation at Thomasville, Ga., this is 37 miles south of where it was recorded last year.

Canker worms are reported as somewhat more abundant than usual in the New England States. Similar reports have been received from Minnesota and Kansas.

One of the worst outbreaks of the forest tent caterpillar ever recorded is under way in central Virginia. Complete defoliation of forest trees has been observed over considerable areas.

The larch case bearer is heavily infesting the larch of New Hampshire, Vermont, and parts of Pennsylvania. Heavy stands appear as if scorched by fire owing to the feeding of this insect.

The European pine shoot moth is becoming generally prevalent in southern New England, southern New York, New Jersey, and Pennsylvania. So far the infestations are all confined to nurseries and transplanted trees.

The Nantucket pine shoot moth is reported as doing serious damage to several species of pine in a nursery in the Philadelphia district of Pennsylvania.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR MAY, 1931.

As forecast, the pale western cutworm has again developed in outbreak numbers in eastern Alberta and Saskatchewan, affecting grain crops, and by the middle of May damage was becoming evident. Indications point to a probable severe outbreak of the red-backed cutworm in sections of Manitoba and Saskatchewan, affecting field and garden crops. The young larvae of this species were appearing in considerable numbers by the middle of the month. Cutworms are proving troublesome to garden plants in southern Vancouver Island and in the Okanagan Valley, British Columbia.

A rather heavy outbreak of white grubs was reported locally from the Pike Lake district, in central Saskatchewan. This constitutes the first record of white grub damage in this territory.

Flea beetles have again appeared in large numbers on various field and garden crops on Vancouver Island, in the Lower Fraser Valley, and in sections of the Okanagan Valley, British Columbia.

The squash bug is reported from British Columbia for the first time, specimens having been taken in the southern part of the province, at Winslow.

The rosy apple aphid and the apple grain aphid are reported as numerous and widespread in the Annapolis Valley, Nova Scotia. In the Niagara district, Ontario, at the end of April, the stem mothers of common species of fruit-tree aphids were noted as apparently less



abundant than usual. In British Columbia, reports indicate that aphids are more abundant than for many years past in southern Vancouver Island, but that they are very scarce in the Lower Fraser Valley. In the latter area ladybird beetles are unusually abundant.

The San Jose scale is reported as more common in apple orchards of the Niagara peninsula, Ontario, than it has been for many years.

The hairy spider beetle, an introduced species affecting flour and other grain products, has increased rapidly in Manitoba in recent years, and is widespread and causing considerable damage.

Ticks are troublesome on horses, cattle, and sheep, in south-central British Columbia, in the range areas and the Dry Belt generally, and cases of tick paralysis have occurred, although losses from this cause are less than last year.

Black flies (Simuliidae) appeared earlier than usual in the south-central sections of British Columbia and are moderately troublesome.

The common cattle grub and the northern cattle grub, particularly the latter species, are below normal in abundance in British Columbia.

## GENERAL FEEDERS

ARMYWORM (Cirphis unipuncta Haw.)

- West Virginia L. M. Peairs (May 27): One report of abundance and damage to corn received from Pendleton County May 23.
- Virginia H. G. Walker and G. E. Gould (May 25): Several serious but localized outbreaks of the armyworm have been reported in the past week. On the Eastern Shore there is an outbreak at Machipungo, with injury to oats, rye, and wheat, and at Nassawadox the damage is serious on oats and wheat. In Princess Anne County damage to oats has been reported.
- Kansas H. B. Hungerford (May 7): This species has been visiting the flowers of fruit trees and lilac at Lawrence in unusually large numbers this year.
- Arkansas D. Isely (May 23): Local outbreaks have occurred in eastern Arkansas, specimens having been collected in Lee, Arkansas, Woodruff, Mississippi, and Prairie Counties.
- Mississippi State Plant Board of Mississippi, Press Release (May 25): Hundreds of acres of alfalfa, oats, and other crops in a number of localities in several Delta counties have been seriously injured during the past week by worms, according to letters and telephone complaints. The greatest damage has occurred in Leflore, Sunflower, and Washington Counties. Examinations of specimens show that several species of insects are at work, the most abundant being the armyworm. According to Prof. R. W. Harned, this is the first record in Mississippi of this insect assuming the army habit, as it is not generally present in sufficient numbers to be important in the South.
- R. W. Harned (May 27): I have just received another report in regard to the armyworms, probably C. unipuncta, from Cleveland. On a plantation in Washington County there was a 20-acre oat field that would probably have yielded more than 60 bushels per acre that has been almost completely destroyed. At the present time the crop is scarcely worth harvesting. The armyworms had completed their damage within 48 hours after they were first noticed. The weed, curly dock, as well as soy bean and alfalfa in the vicinity of this oat field were eaten. The leaves on the oats were completely eaten. Tachinid eggs were noticed on some of the worms. Only ten larvae were sent in. Four of them had Tachinid eggs on them. Apparently something else is also causing the death of the worms, probably a fungous disease.
- Texas F. L. Thomas (May 20): An outbreak has been reported from eleven counties in north-central Texas, with injury to oats, barley, corn, and cotton.

CUTWORMS (Noctuidae)

- ine C. R. Phipps (May 27): Cutworms are moderately abundant on blueberry. As usual we have taken a number of species of cutworms feeding on the seedling blueberry buds at night. These have been collected in Washington, Hancock, Cumberland, and Penobscot Counties. However, they have not been present anywhere in very serious numbers. Probably the most common species is Polia purpurissata Grote.
- ssachusetts A. I. Bourne (May 23): While garden crops are not as yet very far along in Amherst we are beginning to receive numerous complaints of the activities of cutworms. Indications are that they are at least normally abundant this season.
- nnecticut A. E. Wilkinson (May 6): Spinach eaten all over the field by cutworms. Damage: 15 to 20 per cent of stalks in case of asparagus, in Easton and Trumbull.
- w York Weekly News Letter, New York State College of Agriculture (May): One grower has had considerable damage in one vineyard through cutworms cutting off the new shoots. (A. B. Buchholz, Columbia County.)
- ew Jersey Weekly News Letter, New Jersey State College of Agriculture (May): Quite general and severe cutworm damage is reported over southern New Jersey, the insects seriously damaging tomatoes, peppers, broccoli, sweet potatoes, and raspberry shoots. (Abstract, J. A. H.)
- rginia C. R. Willey (May 25): Cutworms are very abundant in Richmond and vicinity. This statement is based on requests for information on control received through the mail and telephone calls.
- orth Carolina W. A. Thomas (May 8): Since the beginning of May, the activity of cutworms at Chadbourn attacking tobacco, beans, tomatoes, cowpeas, and several other crops, has been considerably on the increase. A few specimens have been observed with numerous parasite eggs on the body. Nineteen *Tachina* eggs were counted on a single specimen.
- uth Carolina P. K. Harrison (May 19): Cutworms have been doing some injury to small garden plants at Fairfax, and have been very troublesome in one yard, cutting especially chrysanthemum and petunia plants.
- io T. H. Parks (May 7): Climbing cutworms of this species (Agrotis unicolor Walk.) have been devouring leaves and blossom buds in a 25-acre tract apple orchard with 16-year old trees. In one orchard in Erie County the larvae climb



up the trees at night and defoliate the branches and twigs on the inside of the trees. Many trees have the upper limbs also defoliated. (May 24): Cutworms are now quite serious in some corn and tobacco plantings in southwestern Ohio. They are much more abundant than last spring.

- Indiana J. J. Davis (May 26): Cutworms are common throughout the State and attacking all kinds of vegetation. They are apparently more abundant than for several seasons.
- Illinois W. P. Flint (May 19): The bristly cutworm (Polia renigera Steph.) has been sent from a number of localities in Illinois. Judging by the specimens sent in this is the predominating species in the State this spring.
- C. C. Compton (May 18): Cutworms are appearing in the Cook County trucking area in moderate numbers.
- Kentucky W. A. Price (May 25): Cutworms are very abundant on tobacco in beds, garden crops, and corn in central and western Kentucky this season. The clay-backed species (Feltia gladiaria Morr.) was especially abundant.
- Michigan R. H. Pettit (May 25): Cutworms are very abundant.
- Wisconsin E. L. Chambers (May 26): Many reports of cutworm injury are coming into the office from the southern portion of the state.
- Minnesota A. G. Ruggles and assistants (May): Cutworms were reported generally below normal in numbers throughout the greater part of the State. However, unusual abundance was reported from Murray, Nobles, and Blue Earth Counties. (Abstract, J. A. H.)
- North Dakota J. A. Munro (May 22): The army cutworm (Chorizagrotis auxiliaris Grote) has been reported by county agents and farmers as very abundant in Golden Valley, Stark, and Bowman Counties. The pest is not so abundant in Hettinger, Morton, Burleigh, Wells, Kidder, LaMoure, and Dickey but in all counties has caused injury to such crops as rye, alfalfa, sweet clover, and March-sown wheat.
- Iowa C. J. Drake (May 8): Cutworms are present in a large number of alfalfa and clover fields this spring. They seem to be doing a considerable amount of damage.
- H. E. Jaques (May 25): Cutworms are very abundant in the southeastern part of the State, and generally moderately abundant over the remainder of the State.

ssouri

L. Haseman (May 23): Worms were pupating from May 15 to 20 at Columbia. The variegated cutworm (Lycophotia margaritosa Haw.), the bronzed cutworm (Nephelodes emmedonia Cram.), and Agrotis c-nigrum L. apparently were most abundant.

braska

M. E. Swenk (April 15 - May 15): Reports of damage by cutworms began to be received during the first week in May. One cabbage grower near Lincoln reported serious loss of young transplants during the second week in May. In gardens, the dingy cutworm (Feltia dupens Walk.) was a dominant species. (D. B. Whelan.)

nsas

H. R. Bryson (May 23): Cutworms were reported on May 1 as seriously damaging wheat, alfalfa, and barley at Scott City and also reported doing injuries to gardens at Syracuse. These insects are now moderately abundant in most sections of the State. Owing to the adverse growing conditions cutworm damage in the State has been quite prevalent and rather generally distributed. Western Kansas has suffered considerably.

nessee

C. M. Packard (May 2): C. Benton reports much injury to young corn by cutworms associated with an arctiid moth outbreak, from April 20 to 30. Tentatively identified as Feltia sp.) These worms were also observed to be very numerous in a potato field, sometimes from six to nine to the hill, killing the young plants. Considerable cutworm damage to various crops has been reported in the neighborhood of Fayetteville.

lahoma

C. F. Stiles (May 21): More damage has been reported by cutworms to garden and truck crops in central and western Oklahoma than in a long time.

ssissippi

N. L. Douglass (May 19): Cutworms (Agrotis c-nigrum L.) have been noticed on several occasions damaging fields of corn, and numerous vegetables, such as beans, cabbage, tomatoes, etc. in north-central Mississippi.

F. A. Smith (May 22): Cutworms have been very bad on low or bottom land in DeSoto, Tate, Panola, Tunica, Quitman, and Marshall Counties. Worse along the Coldwater river bottom. Damage was slackening up some last week.

R. W. Harned (May 25): Lycophotia margaritosa has caused serious damage to alfalfa in Washington and Sunflower Counties. On May 8 J. W. Whitaker, County Agent, Greenville, mailed to us nine larvae of this species, three of which had tachinid eggs on them. He stated that they were found eating alfalfa. On May 15 he collected more material from this field and sent in 78 specimens of L. margaritosa and

1 specimen of Cirphis sp. Many of them were parasitized. He stated that in the older alfalfa the worms were making rather slow progress, and that they had moved only from 20 to 40 feet during the previous six days in the particular field from which he secured the specimens. Specimens of Feltia malefida Guen. were collected in a garden at Tupelo on May 7. Slight injury to various garden plants was reported. Specimens of Prodenia ornithogalli Guen. collected on corn were received from Brookhaven on May 7, from Natchez May 14, and from Woodville May 15. Little injury had been caused. Specimens of this species were reported as injuring daisy plants at Lucedale on May 7.

Louisiana

W. E. Hinds (May 25): Cutworms are very abundant and destroying cotton stands in Lafayette Parish.

Montana

A. L. Strand (April 28): Altogether several thousand acres of wheat have been destroyed by the army cutworm (Chorizagrotis auxiliaris Grote). The following counties have reported damage: Ravalli, Missoula, Lewis and Clark, Cascade, Chouteau, Fergus, Musselshell, Stillwater, Big Horn, Dawson, and Wibaux. Some damage obscured by accompanying wind damage.

Idaho

C. Wakeland (May 19): The army cutworm, C. auxiliaris, is very abundant in southern and southeastern Idaho. It is widely distributed in nearly every county of that portion of the State and has done quite a severe damage to dry-land grain and to irrigated alfalfa. In one instance it even ate into and destroyed potato seed pieces. Injury has now abated and most of the larvae are mature.

Nevada

G. G. Schweis (May 21): Cutworms are very abundant in Reno and damage has been reported from numerous places.

Utah

G. F. Knowlton (May 14): A few instances of damage to sugar beets and newly set tomatoes have been observed in Davis and Webster Counties.

Washington

E. J. Newcomer (May 22): Of nearly 300 adult moths caught in molasses baits in an apple orchard in Yakima County Agrotis c-nigrum outnumbered five other species three to one. First moths were caught May 1.

GRASSHOPPERS (Acrididae)

Indiana

C. M. Painter (May 2): H. R. Painter searched for grasshopper eggs in various fields from Attica to Owersville, April 14 - 25, and near Lafayette, but found few. Many present in alfalfa field near Fort Wayne. Serious infestation seems unlikely this season.

Minnesota

A. G. Rugoles and assistants (May): Grasshoppers were reported as scarce throughout the State during the month of May.



North Dakota

A. L. Ford (May 15): A survey in the Rosebud District to determine the abundance of grasshopper eggs was started May 4. Eggs were found in unusual abundance and are expected to start hatching the week of May 18.

Nebraska

M. H. Swenk (April 15 - May 15): Grasshoppers (Melanoplus spp.) began hatching in southeastern Nebraska during the first week in May, but up to date only a small number of the eggs have hatched. One Otoe County orchardist noted slight leaf injury by young grasshoppers to red clover between rows of apple trees on May 6.

Montana

R. L. Shotwell (May 8): In all places we found eggs of grasshoppers, M. atlantis Riley, in abundance. In some places they were very numerous. The problem is the same as it has always been; the eggs were massed in the south and west facing banks along roadsides. While at Beach we saw grasshoppers hatching on south-facing banks where the egg pods had become more or less exposed to the sun. A few days later, the young hoppers were quite numerous. Along the south-facing banks north of Beach the species were M. bivittatus Say and M. atlantis Riley.

Wyoming

A. G. Stephens (May 23): Grasshoppers are moderately abundant in northeastern Wyoming.

Idaho

C. Wakeland (May 19): Grasshoppers were just hatching on May 14 and are moderately abundant at Moscow.

Utah

G. G. Schweis (May 21): Grasshopper eggs are very abundant and are just hatching at Menden.

Utah

G. F. Knowlton (April 27): Young grasshoppers are now hatching out very rapidly and becoming rather abundant in Tooele, Boxelder, Davis, Weber and Cache Counties. (May 18): Grasshoppers are very abundant, more abundant than for some years, in northern Utah. Adults of the overwintering nymphs of Hippiscus corallipes Hald. have been found in Skull Valley and other parts of Tooele County and in Boxelder County for the past three weeks. (May 21): Adult grasshoppers, Trimerotropis vinctulata Scudd., are moderately abundant in Skull Valley. This species overwinters in the adult or large nymph stage here. (May 23): Young grasshoppers are now beginning to damage strawberries in parts of Utah County.

Utah

C. D. Lebert (May 22): The lesser migratory hopper, M. atlantis, is extremely abundant all over the Salt River Valley. Severe injury to alfalfa and other crops has been noted. Hesperotettix spp. and Trimerotropis spp. have also been reported.

California

Monthly News Letter, Los Angeles County Agriculture Commission, Vol. 13, No. 5. (May 15): Grasshoppers in the Antelope Valley have engaged the attention of the county agricultural commissioner's office this month. The hoppers were found feeding on alfalfa and grain and in some instances considerable damage resulted. Infestation is heaviest in the extreme western portion of the valley, although there is some scattered infestation in the eastern part.

WIREWORMS (Elateridae)

Maine

C. R. Phipps (May 27): Wireworms are moderately abundant, Agriotes mancus Say particularly. This species was also seriously abundant last season in many potato fields throughout the State. As a result of their feeding punctures many barrels of potatoes were culled out by the State inspectors. This spring they are present in considerable abundance in or near potato fields in various potato producing districts.

Connecticut

A. E. Wilkinson (April 25): Insects noticed all over a  $3\frac{1}{2}$ -acre patch of peas in Vernon. The same insect has been found rather numerous in freshly plowed soil at Storrs. (May 5): A rather serious outbreak of this pest was reported from two farmers. Damage: 10 to 15 per cent loss and slow growth to balance of crop,  $2\frac{1}{2}$  acres.

P. L. Dean (May 21): Reported by telephone as causing some damage to corn on sod ground at Middletown.

Pennsylvania

C. A. Thomas (May 5): Many adults of the eastern field wireworm (Pheletes agonus Say) were found flying over cultivated fields in Bucks and Montgomery Counties during the first few days of May. They alighted on the bare soil and burrowed in to oviposit. These beetles were active only during the warm sunny part of the day, from about 10 a. m. to 4 p. m. A few were found burrowing into the soil of oat fields. The larvae have not yet caused noticeable injury in this section this year.

North Carolina

W. A. Thomas (May 6): Monocrepidius vespertinus Fab. is doing considerable damage to seedling melons and recently transplanted tobacco at Chadbourn. Several reports of injury have reached the laboratory within the past few days.

South Carolina

J. N. Tenhet (April 29): The first wireworms attacking corn this season were found this date at Fairfax. Infestation is just beginning. (May 20): Injury to corn and cotton by Horistonotus uhleri Horn is becoming very noticeable in this locality. Damage is heavy.

- diana J. J. Davis (May 26): Wireworms were reported as damaging flowering plants at Middleton on May 15, planted melon seed at Brownstown May 15, and corn at Shelbyville May 23.
- chigan R. H. Pettit (May 25): Wireworms are very abundant.
- sconsin E. L. Chambers (May 26): Several reports have been received from county agents and farmers in Grant and LaCrosse Counties to the effect that wireworms are doing unusually severe injury to cornfields on low ground.
- th Dakota J. A. Munro (April 20): Wireworms are moderately abundant in Kidder County, as observed in the preparation of the soil for planting.
- wa H. E. Jaques (May 25): Wireworms were reported as scarce in the following counties: Emmet, Mills, Madison, and Monroe; moderately abundant in Sioux, Osceola, Crawford, Harrison, Page, Guthrie, Union, and Tama; very abundant in Jones County.
- braska M. H. Swenk (April 15 - May 15): The cool weather of late April and May has been favorable to wireworm injury. During the first week in May a Johnson County correspondent reported a loss of stand over large spots in a field of spring-sown alfalfa due to these pests. The species concerned were Monocrepidius auritus Hbst., Melanotus cribulosus Lec., and M. pilosus Blatch.
- nsas H. R. Bryson (May 23): Wireworms are moderately abundant and reports of injury to slowly germinating corn at La Cygne on May 20 were received.
- nsas D. Isely (May 25): Wireworms (Melanotus sp.) are causing injury to corn near Harrisburg. (Determined by J. A. Hyslop.)
- ssissippi andabama K. L. Cockerham (May 30): Injury by Heteroderes laurentii Guer. to the commercial sweetpotato crop this spring is far greater than at any time since this species was discovered in southern Alabama. Many plantations have 50 per cent of the tubers damaged and the Bureau of Markets' Inspectors report that 25 per cent of the crop on shipping platforms during the week of May 23 to 30 was damaged.
- ssissippi N. L. Douglass (May 19): Wireworms have been reported injuring corn on low bottom land in Montgomery County especially.
- lifornia E. O. Essig (May 22): Wireworms are moderately abundant in the Delta of Sacramento River.



WHITE GRUBS (Phyllophaga spp.)

- Massachusetts      A. I. Bourne (May 23): Several complaints have been received of white grubs working in tobacco seed beds in Amherst. In every case it has been found that the insects are small, young stage grubs.
- Connecticut      R. B. Friend (May 18): Adults of Phyllophaga tristis Fab. are very abundant in lawns in Old Lyme.
- Pennsylvania      H. M. Worthley (May 20): Adults are now common about lights and in bait traps, at State College.
- A. B. Champlain (May 27): June beetles were observed in a very heavy flight in the vicinity of Harrisburg on the evenings of May 15 and 16. They have not been observed since that time.
- Maryland      J. A. Hyslop (May 5): Adult beetles are completely defoliating five ornamental European mountain ash that were set this spring in recently plowed sod land at Avel.
- Virginia      H. G. Walker (May 25): June beetles seem to be common throughout the Tidewater region and are reported to be causing damage to many trees and shrubs.
- Georgia      J. B. Gill (April 28): May beetles have been observed during April eating the buds and tender shoots of pecan trees in some orchards in the vicinity of Putney.
- Ohio      E. W. Mendenhall (May 25): May beetles are very numerous in Columbus and vicinity and some complaint that the beetles were eating the leaves of plum and other fruit trees has been received.
- Indiana      J. J. Davis (May 26): White grubs are among the outstanding insects according to correspondence. For the past month they have been reported very abundant in ground being plowed. Apparently in most cases they are of the brood which will mature this year.
- Illinois      W. P. Flint (May 18): C. C. Compton reported adults in flight in considerable numbers in Carroll County on April 18.
- Kentucky      W. A. Price (May 25): White grubs are moderately abundant on corn and tobacco. (May 27): Adult May beetles are very plentiful about lights at nights, in Lexington.
- Michigan      R. H. Pettit (May 25): White grubs are very abundant.

Wisconsin

C. L. Fluke (May 7): A peculiar situation exists in Wisconsin in regard to the appearance of June beetles which at present we are not able to explain. According to our information the spring of 1932 should be the logical time for appearance of the main brood of adults. However, this spring there has already been a heavy flight of beetles. They began appearing as early as April 13 and it seems as if they are beetles which should have appeared next year. We believe that the long continued hot weather of last year caused these insects to develop in two years, which is apparently going to upset the brood cycles. From our counts about 50 per cent remained as larvae over to this year. There are approximately 40,000 adult beetles per acre in the generally infested territory of southwestern Wisconsin. This refers of course to the pasture land.

Minnesota

A. G. Ruggles and assistants (May): White grubs were quite generally reported as but moderately abundant or scarce throughout the State. No reports of unusual abundance were received. (Abstract J.A.H.)

Nebraska

H. E. Jaques (May 25): White grubs were reported as scarce in the following Counties: Sioux, Harrison, Page, Dickinson, Buena Vista, Adams, Emmet, and Worth; moderately abundant in Crawford, Pocahontas, Union, Tama, Monroe, Maraska, Van Buren, Henry, Delaware, Jones, Cedar, Des Moines, and Jackson; very abundant in Wayne, Keokuk, and Buchanan.

Missouri

L. Haseman (May 23): White grubs are moderately abundant at Columbia. Flights of beetles were observed on warm nights about the middle of the month.

Nebraska

M. H. Swenk (April 15 - May 15): The first May beetles were found on the evening of April 29.

Mississippi

R. W. Harned (May 25): Specimens of May beetles identified by J. M. Langston as P. bipartita Horn and P. praetermissa Horn were reported as injuring roses at Canton on May 18.

H. Dietrich (May 23): Adults did some injury to pecans at Lucedale early in the month.

N. L. Douglass (May 19): May beetles have been numerous in Grenada, Yalobusha, and Montgomery Counties this spring, injuring pecans, roses, and other tender growth on plants of a similar nature.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Indiana            W. B. Noble through C. M. Packard (May 2): Very light oviposition occurred from April 17 to 21. The main emergence apparently had not yet arrived on April 30.
- C. M. Packard (May 2): The spring infestation is expected to be generally light in the East Central States owing to small numbers of overwintering puparia and April weather conditions which were rather unfavorable to fly activity.
- Illinois           J. H. Bigger through W. P. Flint (May 18): The Hessian fly is very abundant. From 32 to 45 per cent of tillers in certain fields were infested with eggs on April 22, in Greene County.
- Iowa                H. E. Jaques (May 25): The Hessian fly is moderately abundant in the southern half of the State and there are reports of great abundance in Woodbury and Tama Counties.
- Missouri           L. Haseman (May 23): The Hessian fly situation seems to be not at all serious anywhere in the State.
- Nebraska           M. H. Swenk (April 15 - May 15): The western limits of the present infestation seem to be Gothenburg, Dawson County, in the Platte River Valley, and a little west of McCook, Redwillow County, in the Republican River Valley. In general, the winter wheat came through in good condition, and the abandonment this spring was very small. It is still too early to tell how heavy an infestation the spring brood of the fly will be able to build up this year.
- Kansas             H. R. Bryson (May 23): Dr. E. G. Kelly reports on May 1 that the Hessian fly is plentiful in wheat grown in the northern tier of counties in the western half of the State. These comprise several excellent corn-growing counties.
- Tennessee          C. Benton through C. M. Packard (May 2): Light egg laying occurred throughout April, the main wave from April 18 to 21, but not heavy. Small to mature larvae were present April 28; in the most heavily infested fields about 20 per cent of the stems are infested, two larvae to a stem.
- Oregon             Oregon Agricultural College, Insect Pest Report (March): First emergence of the spring brood of the Hessian fly occurred March 19.



A STEM MAGGOT (Meromyza nigriventris Macq.)

regon

T. R. Chamberlin (April 30): First adults out April 23 at Forest Grove and vicinity, fairly common at the end of the month.

WHEAT JOINT WORM (Harmolita tritici Fitch)

regon

T. R. Chamberlin (April 30): The first adults were out April 27 in Molalla and vicinity. This is 10 days later than last year. There was very little development during the first half of April owing to cool backward weather, but development was very rapid after the 20th. The parasite Eurytoma pumila Phillips had all pupated by April 30, pupation having taken place very recent in most cases. None had issued by the end of the month. Eupelmus saltator Lind. was common in the field during the last one-third of the month. Ditropinotus aureoviridis Crawford is in the larval stage.

CORN

CHINCH BUG (Blissus leucopterus Say)

Illinois

W. F. Flint (May 19): The weather during early May was rather unfavorable to chinch bugs and a slight reduction in numbers occurred. This reduction, however, was not sufficient to make any material difference in the threatened outbreak and it seems likely that we will have very serious damage in the south-central counties of the State. The old bugs are so numerous in some cases as to be killing the wheat. In localities where no wheat is grown the eggs are very abundant in oats. This is true also in some localities where both wheat and oats occur. No young bugs have been seen in the fields as yet, although eggs are present in large numbers.

Missouri

L. Haseman (May 23): The area from Columbia west and to the southwest is badly infested with chinch bugs, and unless wet weather continues we are sure to have heavy losses.

Oklahoma

H. R. Bryson (May 23): Dr. E. G. Kelly reported chinch bugs very abundant from Miami County south to the Oklahoma line and west as far as Sumner County in volunteer oats, wheat, and barley May 8. Owing to the mild winter, the extensive burning campaign carried on over this area did not prove so effective as if the winter had been severe. Scattered reports from May 1 to 5 show that chinch bugs were numerous in rye at Vermillion and were killing the oats in a field at Stark.

- Oklahoma C. E. Sanborn (April 28): The chinch bug is moderately abundant.
- Mississippi R. W. Harned (May 25): Although no complaints have been received in regard to damage caused by chinch bugs, a number of corn plants brought to this office from Attala County, because they were badly infested with larvae of Diabrotica 12-punctata Fab., had on them so many chinch bugs, that it is apparent that these insects are unusually abundant in the field from which the corn plants came.

CORN EAR WORM (Heliothis obsoleta Fab.)

- South Carolina P. K. Harrison (May 22): The first larvae this season were found injuring buds and tassels of corn on the laboratory grounds at Fairfax.
- Florida J. R. Watson (May 21): The corn ear worm is moderately abundant. It is beginning to be noticeable on tomatoes and corn, especially to the south.
- Missouri L. Haseman (May 23): The overwintering pupae of the corn ear worm show that but a small percentage will probably produce moths.
- Alabama J. M. Robinson (May 25): The corn ear worms are moderately abundant at Auburn.
- Louisiana W. E. Hinds (May 25): The corn ear worms are moderately abundant in early planted corn and there are some in tomatoes.

AN ARCTIID MOTH (Apantesis phalerata Harr.)

- Tennessee C. Benton through C. M. Packard (May 2): An outbreak in south-central Tennessee the latter part of April of what is possibly Apantesis phalerata Harr. occurred. Larvae sent to Washington for identification. Not yet reared. Hairy caterpillars were eating the portion of young corn which was above the ground. Reports were received from all of Lincoln County and parts of Moore and Bedford Counties. Probably of general occurrence throughout this part of Tennessee. Lincoln County agent estimates that out of an annual total of 60,000 acres of corn 500 acres are completely destroyed or so seriously injured as to necessitate replanting. Injury to grass lots and pastures has also been reported. One pasture near Fayetteville showed 12 out of 15 acres of hillside pasture completely stripped of all grass, clover, and weeds. Larvae also were observed feeding on tobacco plants in seed-bed which they had invaded from devastated cornfields. The first pupae in the field was

observed April 30. Several fields under observation have already been plowed up for replanting.

AN ARCTIID MOTH (Apantesis rectilinea French)

Tennessee S. Marcovitch (May 6): Larvae of this arctiid moth have been sent in from numerous localities in eastern Tennessee, where they have been severely damaging corn.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

Illinois W. P. Flint (May 19): Corn flea beetles are appearing in injurious numbers in the fields in the central part of the State and in some cases have destroyed the early corn to such an extent that it is necessary to replant.

J. E. Bigger (May 18): The corn flea beetle is very abundant. It is reported that 75 acres of corn were damaged in two areas in Morgan County and 200 or 300 acres severely attacked in Greene County. Reports of large acreage damaged in Illinois River bottom in Scott County were received May 18. The corn is just coming up. These reports were received from widely separated areas.

FLEA BEETLES (Halticinae)

Kansas H. R. Bryson (May 23): Flea beetles were reported on May 16 as attacking 70 acres of corn at Olathe. The infestation in this field showed from 5 to 30 beetles per stalk.

SOUTHERN CORN LEAF BEETLE (Myochrous denticollis Lec.)

Kansas H. R. Bryson (May 23): The southern corn leaf beetle was reported by E. G. Kelly as causing damage in occasional fields in southeastern and central Kansas. The county agent at Wellington reported on May 19 that this insect was causing damage to corn in that section of the state.

CORN BILLBUGS (Sphenophorus spp.)

Missouri L. Haseman (May 23): Corn billbugs were reported as very serious on new bottom-ground corn in Howard County May 20.

SEED CORN BEETLE (Agonoderus pallipes Fab.)

Missouri L. Haseman (May 25): The seed corn ground beetle is coming to lights in great numbers, but no reports of their work on corn have been received.



SUGARCANE BEETLE (Euctheola rugiceps Lec.)

- Mississippi R. W. Harned and assistants (May): The rough-headed corn stalk beetle is found to be moderately abundant in cornfields that have just been plowed from sod. Quite a bit of damage to the young corn. This beetle is moderately abundant in Adams County. It was found feeding on corn May 14. (Abstract G. M.)

## CRANE FLIES (Tipulidae)

- Indiana J. J. Davis (May 26): Leather jackets were reported May 6 as seriously damaging alfalfa at Kendallville. Adults were reported as very abundant at Aurora May 24.
- Missouri L. Haseman (May 23): Crane flies have been emerging in great abundance at Columbia since May 10. It is the large species that was so abundant a year ago.
- Kentucky W. A. Price (May 25): Crane flies have done much damage to corn in the vicinity of Danville.

CLOVER, ALFALFA, ETC.PEA APHID (Illinoia pisi Kalt.)

- Delaware L. A. Stearns (May 21): Pea aphids were very abundant on alfalfa in Sussex and Kent Counties May 12.
- Georgia O. I. Snapp (May 25): Austrian peas around Fort Valley that were not turned under at the proper time are now heavily infested with green aphids.
- Indiana J. J. Davis (May 26): Aphids were apparently injuring alfalfa at Winamac May 15.
- Kansas H. R. Bryson (May 23): Pea aphids continue to be a pest in southwestern Kansas, at Lakin, Garden City, Minneapolis, Salina, and Doniphan.
- Mississippi R. W. Harned and assistants (May): I. pisi was collected on peas at Lucedale on May 6 and at Richton on May 21.
- Arizona C. D. Lebert (April 27): The pea aphid injury was very severe on peas, alfalfa, and vetch during March and April. This season has undoubtedly been the worst in years for this pest.
- Utah G. F. Knowlton (May 6): Pea aphids are now becoming fairly abundant on alfalfa at Willard.

Oregon

D. C. Mote (April 24): L. P. Rockwood, on April 20, together with H. Schoth and the writer, made a survey of the vetch and Austrian pea fields in the vicinity of Corvallis. The infestation of the pea aphid was found to be spotted. In a few fields the infestation was abundant and there was evidence of damage to peas and vetch. In other fields the infestation was scarce and there was no evidence of damage whatever. A considerable number of eggs of syrphus flies were present as well as the fungus Entomophthora aphidis (reported by Mr. Rockwood). Only a few coccinellids were observed, but the valley was experiencing a very high wind and dust storm which probably accounted for the absence of the coccinellids. Mr. Schoth reported both coccinellids and syrphus flies abundant the day before, which was warm and sunny.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Ohio

T. E. Parks (May 25): An inquiry was received from the county agent of Mahoning County, on May 21 regarding the control of larvae which are more abundant on clover than usual.

Indiana

H. R. Painter (May 2): Small to nearly mature larvae were very abundant (from 2 to 6 larvae per plant) in clover fields April 14 - 20 from Owensville through Lafayette to Fort Wayne. The leaves of young growth were noticeably notched by their feeding. There was no evidence of disease.

Illinois

W. P. Flint (May 19): The clover leaf weevil has caused alarm in many counties and serious damage in several of the west-central counties. The insects are now pupating. Many of the larvae have been killed by disease.

Kentucky

W. A. Price (May 25): The clover leaf weevil has caused much damage to clover and alfalfa over the entire State.

Iowa

C. J. Drake (May 8): The clover leaf weevil has been reported recently in the following counties: Cedar, Dallas, Madison, Union, Taylor, Washington, Louisa, and Lee.

H. E. Jaques (May 25): The clover leaf weevil is moderately abundant in Keokuk, Henry, Adams, and Union Counties and very abundant in Manaska and Washington Counties.

Tennessee

C. Benton (May 2): April 23 - 27, Occasional small to mature larvae were observed slightly injuring clover fields near Fayetteville.

Missouri L. Haseman (May 23): The larvae have now about completed their feeding for the year. It seems from reports that they were very abundant in the fore part of May.

Kansas H. R. Bryson (May 23): The clover leaf weevil has been reported as causing damage at Burlington.

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Nevada G. G. Schweis (May 21): The alfalfa weevil is very abundant in western Nevada, causing very heavy damage and necessitating control measures.

LESSER CLOVER LEAF WEEVIL (Phytonomus nigrirostris Fab.)

Indiana H. R. Painter through C. M. Packard (May 2): Adults are apparently rather scarce in Indiana. A few eggs and young larvae were first found April 28 at Lafayette.

Iowa C. N. Ainslie (May 21): This pest, unknown at Sioux City until recently, is evidently multiplying and has been taken in some numbers in young alfalfa. It is rather numerous.

CLOVER ROOT BORER (Hylastinus obscurus Marsham)

Oregon L. P. Rockwood (April 25): The root borer was observed in first flight on April 25. Maximum temperature for day, 71° F. It was not abundant.

CLOVER ROOT CURCULIO (Sitona hispidula Fab.)

Illinois W. P. Flint (May 19): The adults destroyed 45 acres of clover seeded this spring in fields in Scott County. They migrated from near by clover sod.

Missouri L. Haseman (May 23): The clover root curculio was reported by one farmer from Clay County.

ALFALFA CATERPILLAR (Eurytus eurythome Boisd.)

Arizona C. D. Lebert (May 22): Considerable numbers of adults and larvae were found in alfalfa fields May 20. They are not so abundant as they were last year at this time.



SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

uisiana W. E. Hinds (May 25): Larvae in the 2nd instar were found at Baton Rouge in corn on May 13. Subsequent observations have located a center of quite heavy infestation at Plaquemine, where corn and cane are being attacked. Field colonization of Trichogramma minutum Riley for control was started on May 19. Borer infestation generally is very light at this time.

T. E. Holloway (May 21): After a mild winter there was an indication of an early and heavy borer infestation. There has been a rather cool spring, however, the Weather Bureau recording temperatures for May as low as 34° ever recorded. This has retarded both sugarcane and borer development. The crop is now regarded as two weeks late or possibly more. Fields having any noticeable borer infestation are scarce.

SUGARCANE BEETLE (Eucthoola rugiceps Lec.)

ssissippi R. W. Harned (May 25): A correspondent at Tchula sent to this office on May 14 a number of specimens with the report that they were beginning to cause considerable damage to sugarcane. S. R. Cooley, county agent, Belzoni, sent to us, on May 13, 12 adults of this species, but failed to indicate what crop was being attacked.

uisiana W. E. Hinds (May 25): Damage to cane and corn is decreasing at this time. Egg laying has been under way for about five weeks. The unusually prolonged cool weather appears to have retarded the activity and oviposition period of these beetles. The catch of beetles at lights has been less than hoped for.

J. W. Ingram and E. K. Bynum (April 15): As far as we can determine, heavy injury to sugarcane is localized within a 10-mile radius of Franklin. We have also found the beetle damaging corn around Franklin and at Out Off.

F R U I T I N S E C T S

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York

Weekly News Letter, New York State College of Agriculture (May): During the last week in May these insects were pupating in the Lake fruit belt, and on May 25 the first adult was caught in bait traps in Ulster County. (Abstract J. A. H.)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (May): By May 9 approximately 65 per cent of the overwintering codling moths were in the pupal stage in Gloucester County. A few adults were observed in this county on May 16 and by the 23d of the month moths were numerous. (Abstract J. A. H.)

Pennsylvania

H. N. Worthley (May 20): The first adult codling moth was captured in a bait pail May 18-19, at State College. (May 27): About 15 per cent codling moth emergence at State College; 17 per cent at Arendtsville, Adams County.

Delaware

L. A. Stearns (April 30): Pupation of overwintered larvae delayed, but 3 per cent had pupated on April 24 at Camden; abnormally abundant; 75 per cent of overwintered larvae pupated May 21. First emergence of spring-brood moths May 8.

Maryland

P. D. Sanders & C. Graham (May 26): The codling moth emergence is later than in 1930. Last year on May 15 at Hancocks 35 per cent of the overwintering moths had emerged and at Salisbury nearly 40 per cent emerged. On May 15 this year emergence had hardly begun. There seems to be a much heavier carry-over than normal, both inside the packing houses and on the tree trunks. Peak of emergence on Eastern Shore May 21. Records not available for this week from western Maryland, where emergence began on May 11. Records up to May 16 indicate that that was the peak up to that time.

Georgia

C. H. Alden (May 20): The codling moth is moderately abundant at Cornelia, the first-brood eggs hatching from May 17 to 23.

Ohio

T. H. Parks (May 25): Spring-brood moths began emerging in Lawrence County May 9; in Cincinnati and Columbus May 15, and in Wooster May 19, and have not yet commenced to emerge along Lake Erie. At Columbus only three nights since emergence commenced have been warm enough for egg laying.

Illinois

C. C. Compton through W. P. Flint (May 18): Recent examination of overwintering larvae in orchard cages showed 97 per cent winter survival as compared with 10 per cent survival under these same conditions for 1929-30. Pupation started at Des Plaines May 2, as compared with May 5 for 1930.

ntucky W. A. Price (May): The codling moth is moderately abundant. Dr. Eddy reports first codling moth emergence at Paducah on May 4.

chigan R. H. Pettit (May 25): The codling is moderately abundant. It is still in the larval stage, not having pupated yet.

ssouri L. Haseman (May 23): Reports for the entire State show that the earliest emergence occurred in the southern part of the State. on May 23d. Moths were emerging in cages from all parts of the State except the north-central and northeastern parts. With warm weather we expect the peak of first-brood moths at Columbia by June 1. Emergence of the moths was delayed by the recent cool spell but moths are now emerging rapidly.

R. M. Jones (May 20): The first spring-brood moths emerged on May 4 and egg deposition was recorded on May 17.

aho Claude Wakeland (May 19): The codling moth began emergence the first week of May at Parma and Lewiston.

shington E. J. Newcomer (May 22): The first moths appeared in Yakima County April 27 as compared with April 30 in 1930. By the time of the first cover spray (May 18) about twice as many moths had appeared in baits as at that time last year, when the same number of baits were used in the same location. This was due to very warm weather from May 11 to 14.

lifornia Monthly News Letter, Los Angeles County Agricultural Commissioner (April 15): The peak of moth emergence this spring in the Antelope Valley was reached April 10, which was three weeks early. Therefore, the eggs laid by the moth will be hatching about April 20.

#### A TENT CATERPILLAR (Malacosoma sp.)

egon Oregon Agricultural College & Experiment Station. Oregon Insect Pest Report: There is an unusually heavy infestation in the vicinity of Corvallis. Wild rose bushes and alders west of Corvallis are heavily infested. More than 50 tents have been observed in one apple tree.

#### EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

w England C. W. Collins (May 29): The eastern tent caterpillar was observed generally common but abundant locally especially in vicinity of York, Falmouth, Brunswick, and Bath, Maine. In eastern Massachusetts this species is common generally, but is found abundant in some localities, mostly on wild black cherry. (John V. Schnaffner, Jr.)



Maine

H. B. Pierson (May 26): The eastern tent caterpillar is extremely abundant.

C. R. Phipps (May 27): The eastern tent caterpillar is very abundant on apple, wild pin cherry and black cherry.

Vermont

H. L. Bailey (May 25): The eastern tent caterpillar is scarce to moderately abundant.

Connecticut

W. E. Britton (May 23): The first and only nest this season was observed at Mount Carmel on May 16.

M. P. Zappe (May 21): This insect is much more abundant in Litchfield County than in the rest of the State but not very plentiful even in Litchfield County. It is less abundant than usual.

Pennsylvania

T. L. Guyton (May): The eastern tent caterpillar is moderately abundant in Dauphin County.

H. N. Worthley (May 27): A few webs have been observed here and there around State College. The caterpillars are nearly full-grown.

J. N. Knull (May 14): This insect seems to be more abundant than usual this year in the Mont Alto State Forest, in Franklin County. The first webs were observed April 28.

Maryland

E. N. Cory (May 25): The eastern tent caterpillar is very abundant.

Delaware

L. A. Stearns (May 21): The eastern tent caterpillar is rather scarce throughout the State. First nests were reported April 16.

West Virginia

L. M. Peirs (May 27): The eastern tent caterpillar is probably more abundant than usual at Morgantown and other sections.

Virginia

H. G. Walker and G. E. Gould (May 25): The eastern tent caterpillar is scarce at Norfolk.

C. R. Willey (May 25): The eastern tent caterpillars are very abundant at Richmond and vicinity and west to Lynchburg and Gordonsville.

Wisconsin

E. L. Chambers (May 26): Several reports have come to our attention of the appearance of the tents from several southern counties.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

York Weekly News Letter, New York State College of Agriculture (May): The first larva was observed in western New York May 1. By the middle of the month they were quite generally hatching throughout the State. No unusual damage has been reported as yet. (Abstract J. A. H.)

ho C. Wakeland (May 19): The fruit tree leaf roller is nearly absent from the State.

EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)

York Weekly News Letter, New York State College of Agriculture (May): As a whole budmoths were not as numerous as usual over the greater part of the State. However, in the Lake fruit belt, particularly in Orleans and Monroe Counties, they are doing considerable damage. (Abstract J. A. H.)

higan E. McDaniel (May 27): The budmoth is common all over the State.

PISTOL CASE BEARER (Coleophora malivorella Riley)

t Virginia L. M. Peirs (May 27): The pistol case bearer is moderately abundant in the eastern panhandle and is spreading.

APPLE APHIDS (Aphididae)

mont H. L. Bailey (May 25): Fruit aphids are scarce.

sachusetts A. I. Bourne (May 23): The apple aphids are quite scarce at Amherst; in fact, we have had no complaints of their abundance from any section.

necticut W. E. Britton (May 23): Fruit aphids are scarce.

York Weekly News Letter, New York State College of Agriculture (May): Aphids in general do not seem to be abnormally abundant except in restricted areas. (Abstract J. A. H.)

Jersey Weekly News Letter, New Jersey State College of Agriculture (May): Fruit aphids are so extremely scarce throughout the State that spraying for them is being eliminated in many orchards. (Abstract J. A. H.)

aware L. A. Stearns (May 21): Fruit aphids are rather scarce throughout the State.

yland E. N. Cory (May 25): Fruit aphids are scarce to moderately abundant.

rida J. R. Watson (May 21): Fruit aphids are scarce.

- Wisconsin C. L. Fluke (May 23): Fruit aphids are absent. I have been unable to locate any on apples.
- Minnesota A. G. Ruggles and assistants (May): Green aphids were scarce throughout the State during May.
- Wyoming A. G. Stephens (May 23): Fruit aphids are moderately abundant in south and central Wyoming.
- Nevada G. G. Schweis (May 21): Fruit aphids are very abundant at Reno and damage is reported from many places.
- Arizona C. D. Lebert (May): The aphid injury is past. They were reported scarce in the Salt River Valley.

APPLE APHID (Aphis pomi DeG.)

- Maine C. R. Phipps (May 27): Aphis pomi is moderately abundant on apple.
- Connecticut W. T. Clark (May 19): Very little damage by the apple aphid to date in New London County.
- New York Weekly News Letter, New York State College of Agriculture (May): As the month advanced, the green apple aphid became more plentiful and in the lower Hudson Valley was multiplying rapidly from the middle to the end of the month. (Abstract J. A. H.)
- New Jersey Weekly News Letter, New Jersey State College of Agriculture (May): Towards the end of the month this aphid was showing up in increasing numbers. (Abstract J. A. H.)
- Mississippi F. A. Smith (May 22): The little green aphids have been very abundant on apple, roses, shrubs, and some ornamental plants in Panola, Tate, and De Soto Counties up to this date.

ROSY APPLE APHID (Anuraphis roseus Baker)

- Connecticut N. Turner (May 21): In one orchard at Hamden which was carefully searched a few colonies were present and curling the leaves.
- New York Weekly News Letter, New York State College of Agriculture (May): Early in the month this aphid was extremely scarce. As the month advanced it became more numerous, and in the lower Hudson River Valley it looked as though some damage would be done towards the end of the month. (Abstract J. A. H.)
- New Jersey Weekly News Letter, New Jersey State College of Agriculture (May): During the last week in the month rosy apple aphids were reported as becoming quite abundant in Burlington, Camden, and East Essex Counties. (Abstract J. A. H.)



nsylvania

H. N. Worthley (May 27): Rosy aphids are scarce on apple at State College.

T. L. Guyton (May): Rosy aphids are moderately abundant in Cumberland and Franklin Counties.

Maryland

E. N. Cory (May 25): The rosy aphid is more numerous than in previous years.

Virginia

C. R. Willey (May 25): Rosy apple aphids are moderately abundant at Richmond.

W. J. Schoene (May 26): The rosy aphid is causing serious injury to apple orchards in the central part of the State. On some trees practically 100 per cent of the clusters are damaged. The infestation is very severe in some orchards and practically absent in others in the same locality.

Georgia

C. H. Alden (May 20): The rosy aphid is moderately abundant at Cornelia, bad on Yates apples.

to

T. H. Parke (May 25): These aphids are now quite abundant in some orchards in Lawrence County.

Michigan

R. H. Pettit (May 25): The rosy aphid is moderately abundant.

Missouri

R. M. Jones (May 20): The rosy aphid is moderately abundant.

L. Haseman (May 23): The rosy apple aphid is very abundant on several varieties but mostly on growing tips and not on fruit clusters, at Columbia west to Kansas City and east to St. Louis and Cape Girardeau.

#### APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

York

Weekly News Letter, New York State College of Agriculture (May): In the lower Hudson River Valley this aphid has been by far the most numerous species. (Abstract J. A. H.)

nsylvania

H. N. Worthley (May 27): Apple grain aphids are scarce on apple at State College.

#### REDBUG (Lygidea mendax Reut.)

York

Weekly News Letter, New York State College of Agriculture (May): The first redbugs were observed in the Lower Hudson River Valley May 3, and by the end of the first week they were appearing in the Lake region. By the middle of the month they were quite numerous in all parts of the State and were reported as serious in the Lake fruit belt. (Abstract J. A. H.)

Jersey

Weekly News Letter, New Jersey State College of Agriculture (May 26): Reports on insects indicate that there is a moderate infestation of the redbug in Sussex County.

Virginia C. R. Willey (May 25): On May 22 we saw more redbugs<sup>feeding</sup> in an old feeding apple orchard in Powhatan County, near Powhatan Court House, than we have seen for years. Only nymphs were present but we believe them to be L. mendax.

TARNISHED PLANT BUG (Lygus pratensis L.)

Mississippi N. L. Douglass (May 19): Damage of the tarnished plant bug attacking peaches has been noticed in several orchards in the vicinity of Grenada.

Washington E. J. Newcomer (May 22): Fruit bud injury was not so severe in 1931 as in 1930, owing probably to the cooler weather previous to blooming, which prevented the bugs from feeding so extensively. Injury to fruit after blooming, however, seems to be fully as extensive as last year.

APPLE LEAFHOPPERS (Cicadellidae)

Massachusetts A. I. Bourne (May 23): Leafhoppers appear to be quite abundant in some of the orchards in Plymouth, Bristol, Middlesex and Essex Counties. In other sections of the State the infestation is rather spotty.

Connecticut H. A. Rollins (May 15): Apple trees set in 1930 had rather serious infestation on leaves at Woodstock. Leaves have shown some mottling already.

P. Garman (May 22): Nymphs appearing in considerable numbers in many apple orchards in New Haven County.

New York

New York

Weekly News Letter, New York State College of Agriculture (May): Typhlocyba pomaria McAtee, which caused serious damage in the Hudson River Valley last year, was first observed in the orchards during the first week in May. By the end of the month it was hatching rapidly, and indications were that hatching would be completed in time for the treatment immediately following the calyx spraying. (Abstract J. A. H.)

Pennsylvania H. N. Worthley (May 27): Apple leafhopper nymphs (species not yet determined) appearing on apple foliage at State College.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Wisconsin E. L. Chambers (May 27): Three new infestations were discovered recently in Ft. Atkinson, Mukwonago, and Hazel Green. The scale is still confined to less than a dozen counties and is not yet present in any of the commercial apple growing sections of the State.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

- York E. P. Felt (May 26): The oyster-shell scale is generally abundant on its favorite food plants, such as poplar, lilac, and ash, a bad infestation having been observed recently at Haverstraw.
- iana J. J. Davis (April 29): The oyster-shell scale has been reported abundant on lilac at Lafayette, Otterbein, and Williamsport.
- higan R. H. Pettit (May 25): The oyster-shell scale is very abundant.
- consin C. L. Fluke (May 23): Overwintering eggs are plentiful. They have not hatched.
- nesota A. G. Ruggles (May 22): The oyster-shell scale was reported as unusually abundant from scattered localities throughout the State.
- raska M. H. Swenk (April 15 - May 15): The oyster-shell scale continues to be reported as very injurious in apple orchards in our northeastern counties. A Knox County correspondent sent very heavily infested samples on April 20, with the statement that many of his trees were dying from the attack.
- sas H. B. Hungerford (May 25): Reports of renewed infestation of the oyster-shell scale at Topeka have been received.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

- iana J. J. Davis (May 26): The shot-hole borer was destructive to apple in Dearborn County, according to reports dated May 7.
- higan R. H. Pettit (May 25): Scolytus rugulosus has been on the increase the last few years because drought has weakened the trees.

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

- o T. H. Parks (May 25): Injury in the southern and central counties is not so extensive as anticipated last month. Orchards where the insect used to be serious have very few, while in some orchards of Lawrence County the beetles are more numerous than in previous years. There is no general outbreak this year.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

- York Weekly News Letter, New York State College of Agriculture (May): The first adult to be collected in the extreme north-eastern corner of New York State was found on May 9. By the end of the month the insects were numerous enough to make feeding on the young fruit evident. (Abstract J. A. H.)



STRIPED CUCUMBER BEETLES (Diabrotica vittata Fab.)

Mississippi

R. W. Harned (April 23): On March 2, E. T. Barrett, Saltillo, wrote: "Last spring our apple crop was completely destroyed by striped cucumber beetles. They ate the petals and even the young apple stems. This damage was done before the apples were in full bloom, they did it so quickly." On April 11, Mr. Barrett sent about 50 adult beetles that were identified by J. M. Langdon as D. vittata, and wrote: "I am mailing you a few of the striped beetles. I have found that they cleaned up the apple blossoms all around here last year and did it in a few days."

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Vermont

H. L. Bailey (May 25): First newly hatched red mites noted at Dorset, Bennington County, May 15. Rather heavy mortality is apparent in overwintering eggs.

Massachusetts

A. I. Bourne (May 23): We found the European red mite to be hatching during the warm period of May 2 to 4 at Amherst.

Connecticut

H. A. Rollins (April 28): Most commercial orchards of apples have some European red mite throughout the State.

P. Gorman (May 22): The European red mite has been observed in several orchards in New Haven County.

New York

Weekly News Letter, New York State College of Agriculture (May): These mites began hatching during the first week in the month and were quite generally observed throughout the State. (Abstract J. A. H.)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (May): This mite seems to be unusually scarce throughout the State this year. (Abstract J. A. H.)

PEACH

PEACH BORER (Aegeria exitiosa Say)

- Maryland E. N. Cory (May 25): The peach borer is very abundant.
- Georgia C. H. Alden (May 20): The peach borer is scarce at Cornelia. Some nearly full-grown larvae have been observed.
- Ohio T. H. Parks (May 25): Many complaints from over the State have reached us about injury to trees by these larvae this spring.
- E. W. Mendenhall (May 23): Peach and cherry trees and in some cases plum trees are found badly infested with the peach borer on city lots in Columbus and vicinity.
- Mississippi F. A. Smith (May 22): The peach borer is very abundant in northwestern Mississippi on peach trees that were not treated with paradichlorobenzene last October.

PEACH TWIG BORER (Anarsia lineatella Zell.)

- Indiana J. J. Davis (May 26): The peach twig borer was unusually abundant in southern Indiana the past month. It was commonly mistaken for the oriental fruit worm.
- Arizona C. D. Lebert (May 22): Considerable branch-tip injury to peaches and apricots was found in the Phoenix area. In several instances nearly every developing twig was killed back at the tip for an inch or two.

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

- Connecticut P. Garman (May): Twig injury is not yet noticeable. Eggs have been observed on trees near the Experiment Station at New Haven.
- W. E. Britton (May 23): The oriental fruit moth is moderately abundant. Eggs are being laid.
- New Jersey Weekly News Letter, New Jersey State College of Agriculture (May 26): The oriental peach moth was noted at work today (May 22) in Essex County.
- Pennsylvania T. L. Guyton (May): The oriental fruit moth is moderately abundant.
- Delaware L. A. Stearns (May 21): First emergence of the oriental fruit moths of the spring brood occurred at Millsboro, April 18. Emergence of the spring-brood moths has about ended. No twig injury has been observed to date.

- Maryland E. N. Cory (May 25): The oriental fruit moth is moderately abundant.
- Georgia O. I. Snapp (May 2): The first twig injury of the season was observed on April 22 at Fort Valley. The oldest larvae found in peach twigs today (May 2) were about two weeks old. Last year the first twig injury was observed here on April 29, which was the latest date for first twig injury since the insect became established here. The dates of the first twig injury of the other years are: April 4, 1929; April 25, 1928; April 1, 1927; April 20, 1926; April 10, 1925. This insect continues to be a peach pest of only secondary importance in this section of the Georgia peach belt.
- C. H. Alden (May 20): The oriental fruit moth is scarce at Cornelia. Occasionally larvae can be found in small green peaches.
- Kentucky W. A. Price (May 25): The oriental fruit moth is moderately abundant. It appeared at Paducah in some numbers during early May, there being as many as 30 wilted twigs per tree. At this time they seem to have pupated (May 22).
- Michigan R. H. Pettit (May 25): The oriental fruit moth is scarce.
- Tennessee H. G. Butler (May 18): Larvae were observed in peach twigs at Harriman today but they were not numerous.
- Alabama J. M. Robinson (May 25): The oriental fruit moth is moderately abundant at Millport.
- Mississippi R. W. Harned (May 25): Peach twigs injured by larvae were received on April 29 from Meridian, on May 4 from Ruleville, and on May 20 from Water Valley.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

- Massachusetts A. I. Bourne (May 23): In his jarring tests Professor Whitcomb found the first beetles on May 15. By the 18th he was able to collect a considerable number.
- New York Weekly News Letter, New York State College of Agriculture (May): Adults were obtained by jarring in the lower Hudson River Valley on May 6. On May 9 they were observed in the extreme northeastern corner of the State, and by the end of the month they were numerous in the Lake fruit valley. Although considerable fruit scarring has been observed, the abundance does not appear to be abnormal. (Abstract J.A.H.)
- New Jersey Weekly News Letter, New Jersey State College of Agriculture (May): Although the plum curculio is being observed quite generally over the State, it does not appear to be so numerous as last year. (Abstract J.A.H.)



- Pennsylvania T. L. Guyton (May): The plum curculio is very abundant.
- Delaware L. A. Stearns (May 21): Emergence from hibernation is considerably delayed. The first emergence from hibernation at Camden occurred April 18. The insect appears to be much less abundant than it was last year.
- Maryland P. D. Sanders and C. Graham (May 26): The spring emergence is later than in 1930 and on the Eastern Shore is much lighter. It is felt that both the short peach crop last year and the hot, dry condition of the soil during the pupation period were unfavorable for curculio development. Jarring records at Salisbury/1930 showed: May 10, 6.7 curculio per tree and in 1931 on May 13, only 2.65 per tree. The season is only about seven days late as judged by the stage of the trees. Jarring records on curculio indicate heavy invasion of the orchards about the 16th at Hancock. Most of the records of heavy infestations come from jarred apple trees.
- Virginia C. R. Willey (May 25): The plum curculio is very abundant at Richmond and vicinity. Practically all plum and peach trees examined were infested, some very badly.
- H. G. Walker and G. E. Gould (May 25): The plum curculio is moderately abundant at Norfolk.
- Georgia C. H. Alden (May 20): The spring brood of the plum curculio infestation is light at Cornelia.
- O. I. Snapp (May 8): This season's infestation at Fort Valley is the lightest in 13 years; 18,523 peach drops were cut on May 7 and 8, and only 402, or 2.2 percent, were infested with larvae. The infestation last year ranged from 10.6 to 23.5 per cent for the first collection of drops, and in 1929 the infestation varied from 42.7 to 55.0 per cent for the first collection. The unusually light infestation this year is attributed to the dry weather during the pupation season in 1930, the effectiveness of the arsenical treatments in 1930 when very little rain fell between the several applications, and the jarring of the trees to catch the adult curculios, more of which was done last year than ever before. The first larva to reach maturity this season left a peach drop on May 7. This is 10 days later than the first record last year when only one brood occurred. (May 19): 7,012 peach drops were cut on May 13 and of these only 116, or 1.6 per cent, were infested. On May 19 another collection of 7,678 drops was cut and of these only 70, or 0.9 per cent, were infested. The figures further substantiate my report on May 8 that the curculio infestation in the Georgia peach belt is the lightest since 1918. Very few growers in

this locality picked up drops this year on account of the light infestation, and they were justified in omitting this usual practice. There has been no pupation to date (May 19), although the first larvae entered the soil on May 7. The continued unseasonably cool weather is retarding development. (May 25): The first pupation of the season took place today. That is just ten days later than the first pupation last year when the pupation was considered unusually late. It is extremely doubtful if there will be a second generation this year.

- Ohio T. G. Barnes (May 25): The first egg punctures on plums were found at Columbus May 23. This was about one week after the fall of the apple bloom. Mr. C. H. Huff was unable to secure adults at Cincinnati by jarring trees and fruit examination until May 14, his last day in that County. The beetle did not appear in the trees there during the blooming of apples.
- Kentucky W. A. Price (May 25): The plum curculio is scarce and emergence is late. The first adult beetle taken by jarring on April 15 and very few have been taken since.
- Tennessee H. G. Butler (May 11): First plum curculio larva found in a peach in an orchard at Harriman May 11. The first insectary reared larva hatched May 9. The insect appears to be scarce.
- Iowa H. E. Jaques (May 25): The plum curculio is very abundant in Sioux, Henry, and Page Counties.
- Missouri L. Haseman (May 23): The plum curculio is quite abundant, stinging fruit at Columbia; up to May 22, only an occasional puncture in fruit.
- Alabama J. M. Robinson (May 25): Plum curculios are very abundant at Auburn.
- Mississippi N. L. Douglass (May 19): Where spraying was neglected injury of the plum curculio may be seen in north central Mississippi.
- F. A. Smith (May 23): The plum curculio is very abundant on trees that have not been sprayed everywhere that I made observations in Tate County.
- Oklahoma C. E. Sanborn (April 28): The plum curculio is moderately abundant.

A BLISTER BEETLE (Pomphopoea aenea Say)

Indiana

J. J. Davis (April 29): Blister beetles (P. aenea) were ruining peach blossoms in an orchard at Vallonia, April 13. They were present by the thousands in a small area and completely denuded trees of blossoms. At that time the trees were not quite in full bloom. A week later when the county agent visited the orchard, all of the beetles had disappeared.

PEAR

PEAR PSYLLA (Psyllid pyricola Foerst.)

New York

Weekly News Letter, New York State College of Agriculture (May): This insect threatens to be a serious problem in western New York this year. By the middle of the month they had practically finished laying, and the earlier layed eggs were hatching rapidly by the 18th. Heavy rains in the early part of the month very materially reduced the population of these insects in the Hudson River Valley. (Abstract J.A.H.)

PEAR MIDGE (Contarinia pyrivora Riley)

New York

Weekly News Letter, New York State College of Agriculture (May): Damage is again evident this year in pear orchards in the lower Hudson River Valley. (Abstract J.A.H.)

PEAR THRIPS (Taeniothrips inconsequens Uzel)

New York

Weekly News Letter, New York State College of Agriculture (May 18): Ulster Co. (W. J. Clark): Pear thrips adults are now found in the summer stage.

Oregon

D. C. Mote (April 24): J. Wilcox reports the infestation of the pear and prune thrips on prunes to be spotted. Very serious damage in certain prune orchards. The young thrips are now present in the orchard.

Ore. Agr. Coll. and Exp. Station, Oregon Insect Pest Report (March): J. Wilcox reports the infestation to be spotted. Very serious damage in certain prune orchards. The young thrips are now present in the orchard. Prune and pear thrips are moderately abundant in Douglas County, general infestation. Very abundant in Ballston, Polk County, spotted in rest of Polk County. Very abundant in Yamhill County.

California

Monthly News Letter, Los Angeles County, Agriculture Commissioner, Vol. 13, No. 4. (April 15): The State Department of Agriculture recently assigned Stewart Lockwood, Assisting Entomologist, to look over the situation of a rather heavy



infestation of thrips in pear and apple orchards in the Antelope Valley. The insects are numerous enough to cause many of the growers in the Valley to become concerned about the best methods of control.

### CHERRY

#### BLACK CHERRY APHID (Myzus cerasi Fab.)

New York

Weekly News Letter, New York State College of Agriculture (May): Black cherry aphids were present in both the lower Hudson River Valley and in the western part of the State. By the end of the month they were increasing very rapidly in the lower Hudson River Valley. (Abstract J.A.H.).

#### CHERRY FRUIT FLIES (Rhagoletis spp.)

Michigan

R. H. Pettit (May 22): We are still collecting cherry fruit flies from cages, and there is a vast difference in the number produced by the different wild cherries. I feel very safe in saying that the black bodied cherry fruit fly, (R. fausta O. S.) breeds by the thousand in the pin cherry, which is also called the fire cherry, Prunus pennsylvanica. We have obtained lesser numbers from the other wild cherries and from some of them we have obtained some of the white-banded adults (R. cingulata Loew) as well. I rather think that the breeding of white-banded specimens in quantity in wild cherries is a new thing. Probably others have failed to produce them because they did not collect cherries by the peck and cage them over as we did.

#### CHERRY CASE BEARER (Coleophora pruniella Clem.)

Wisconsin

C. L. Fluke (May 15): An average of about 25 case bearers per one foot of twig on apple in Door County. Less on cherries, considerably more on apples. Definite counts this spring show 90 per cent kill on cherries and 75 per cent kill with the same material on apples.

### RASPBERRY

#### A CURCULIONID (Geoderes melanothrix Kby.)

Washington

Wm. W. Baker (April 8 and 9): G. melanothrix is more abundant on Marlboro raspberries in the vicinity of Puyallup than usual. It was very numerous in some fields in 1915 in the same vicinity but is now rather widespread throughout this immediate territory every year although seldom injurious: It normally feeds on native shrubs and plants.

RASPBERRY FRUIT WORM (Byturus unicolor Say)

New York Weekly News Letter, New York State College of Agriculture (May): Beetles began emerging throughout the Hudson River Valley in central New York during the first week in the month. By the end of the month they were very numerous, particularly in the Hudson River Valley where they were skeletonizing the leaves and eating off the flower buds. (Abstract J.A.H.)

Michigan R. H. Pettit (May 25): The American raspberry beetle is common in all raspberry patches in Berrien County. In and around Benton Harbor control measures have been necessary. At present the adult beetles are feeding on the leaves and have started to work on the opening buds.

Washington Mr. W. Baker (May 25): Bud and blossom counts on raspberries and loganberries at Auburn, Alderton, Pyallup, and Sumner gave from 18.4 to 26 per cent damage but not enough counts have been made to indicate how general this is. Moderately few eggs have been observed to date.

GRAPE

GRAPE FLEA BEETLE (Haltica chalybea Ill.)

New York New York News Letter, N. Y. State College of Agriculture (May 4): Found one case of quite severe damage to grapes by the flea beetle in Columbia County.

Virginia C. R. Willey (May 11): Mr. F. G. Claiborne, of Guinea, reports the grapevine flea beetle doing considerable damage to his grapes this year. It is eating buds as they open. He has been growing grapes for 40 years, and this is his first experience with this pest. He has a planting of over a thousand vines, and fears destruction.

Mississippi R. W. Harned and assistants (May): The grape flea beetle is quite abundant in some sections on cultivated and wild grapes, in Stone County, and was reported from Lauderdale County on May 9.

GRAPE LEAFHOPPER (Erythroneura cones Say)

New Jersey Weekly News Letter, New Jersey State College of Agriculture (May 26): Leaf hoppers are showing up in large numbers on grape in Gloucester County.

Virginia C. R. Willey (May 25): Grape leafhoppers are very abundant in Powhatan County.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Delaware

L. A. Stearns (May 19): First emergence of first brood adults was observed at Camden, Millsboro and Bridgeville today.

CURRENT

CURRENT APHID (Myzus ribis L.)

New York

Weekly News Letter, New York State College of Agriculture (May): Currant aphids are apparently more numerous than usual in commercial plantings in the lower Hudson River Valley and in the extreme western part of the State. (Abstract J.A.H.)

CURRENT FRUIT FLY (Epochea canadensis Loew)

Oregon

D. C. Mote (April 24): S. C. Jones reports that the first gooseberry fruit fly emergence from puparia in insect cages was on April 13. Practically all of the flies have now emerged.

IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

Missouri

L. Hasenan (May 23): Imported gooseberry worms were reported by a few people at Columbia May 15 to 23.

Nebraska

M. H. Swenk (April 15-May 15): The first eggs of the imported currant worm were found on April 22, and the first larvae were hatched about the first of May. (D. B. Whelan.)

PERSIMMON

PERSIMMON PSYLLA (Trioza diospyri Ashm.)

Mississippi

H. Dietrich (May 23): T. diospyri is very abundant on cultivated and wild persimmon in George, Greene, and Perry Counties.

PECAN

PECAN APHIDS (Aphidae)

Georgia

J. B. Gill (April 23): Myzocallis fumipennis Fitch is already showing up in the pecan orchards of southern Georgia but only in very limited numbers.



T. L. Bissell (May 18): The first adult of Monellia nigronunctata Gran. was observed on April 20. Adults are very scarce, found only on small seedlings May 15, at Experiment. Adults and young of M. costalis Fab. were abundant on pecan May 15 at Experiment. The first adult was observed on April 20. The first adults (stem mothers) of Melanocallis caryae-foliae Davis were observed April 13 on hickory at Experiment. April 17 numerous adults and first-generation young were abundant on pecan. The first leaf injury was seen May 15. The aphids are now scarce on pecan.

Mississippi

R. V. Harned (May 25): Specimens of Longistigma caryae Harr. on pecan have been received from Sumner and Fope.

Alabama

J. M. Robinson (May 25): The giant aphid L. caryae is very abundant on pecan foliage at Millport, West Blocton, and Bellamy.

#### HICKORY PHYLLOXERA (Phylloxera caryae-caulis Fitch)

Mississippi

R. F. Colmer (May 19): The hickory phylloxera was moderately abundant on young seedling pecans, May 14.

Louisiana

W. E. Hinds (May 25): This aphid appears to be unusually widespread and injurious on pecan twigs and leaves of new growth this season. Heavily infested trees are suffering retarded growth and malformation, and will probably lose most if not all of their fruiting possibilities while so infested. The worst infestation known is in the vicinity of Lafayette, but complaints have been received also from several other localities.

#### PECAN CASE BEARER (Acrobasis juglandis LeB.)

Mississippi

F. F. Ansler (May 17): Leaf case bearers did great damage to pecans in Harrison, Hancock, Jackson, Stone, and Lee Counties this spring.

Texas

F. L. Thomas (May 6): The pecan leaf case bearer injury is much more severe than usual, according to Dr. S. W. Bilsing. A number of trees were defoliated at Simonton.

#### A CASE BEARER (Acrobasis palliolella Rag.)

Georgia

J. B. Gill (April 23): A pecan leaf case bearer (A. palliolella) is causing serious damage to pecan orchards in southern Georgia and will be quite a factor in reducing the yield of nuts in unsprayed orchards.



PECAN SPITTLE BUG (Clastoptera obtusa Say)

Mississippi

R. W. Harned and assistants (May): The first spittle bugs of the season were noted in a pecan orchard near Pascagoula Apr. 22. Specimens were observed on pecan trees at Cannonsburg on May 23.

A FLANT BUG (Flagiognathus caryae Knight)

Mississippi

R. W. Harned and assistants (May): The mirids are very abundant on pecans in Adams, Hinds, Stone, Forrest, and Harrison Counties. Sometimes four or five adults are found on the young pecan cluster. The falling of young nuts is undoubtedly due to these insects, as pollination was very good this year.

OAK TWIG IRUNER (Hypermallus villosus Fab.)

Georgia

J. B. Gill (April 28): There seems to be an increased damage to limbs of pecan trees in orchards growing adjacent to woodland tracts.

HICKORY SHOOT CURCULIO (Conotrachelus aratus Gern.)

Mississippi

R. W. Harned (May 25): Pecan twigs containing the larvae were received from Brookhaven on April 28, May 8, and May 15. Specimens of this species were also received from Mize on May 18. Serious injury was reported in each case.

SAWFLIES (Tenthredinidae)

Mississippi

J. F. Kislanko (May 20): A pecan sawfly, Acordulecera maura McG., is very abundant in Stone County this year. Some orchards are very badly injured. Some trees are so damaged that the injury can be noticed from several hundred yards. In previous years this insect was noticed in moderate abundance on hickory but it is the first time it injured pecan trees in this section for the past few years. The oviposition was observed on April 24, although on this day larvae one-third grown were observed.

R. W. Harned (May 25): Complaints in regard to sawfly larvae on pecans accompanied by specimens have been received from a number of places. Larvae tentatively identified by J. M. Langston as Megaxyela major Cress. were received from Meridian, Renova, and Dorsey.



CITRUS

GREEN CITRUS APHID (Aphis spiraeicola Fatch)

Mississippi R. W. Farned and assistants (May): A. spiraeicola has been very abundant on spiraeas since the first of the month in George, Greene, and Perry Counties. Specimens have been received from Lucedale and Ocean.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Mississippi H. L. Bond (May 19): The cottony-cushion scale is becoming very abundant on Tittosporum and attacking other plants to some extent in Laurel.

Arizona C. D. Lebert (May 22): This scale is again appearing in all of the last years' infestations which were practically cleaned by winter 1930. It is considerably more abundant than last month on both ornamentals and citrus. The predacious ladybird beetle Rodolia cardinalis Muls. which was so abundant last season, has made its appearance in three separated groves. However, natural establishment and spread of these predators was not depended on entirely and we have placed many specimens on various infestations this past month. The scale is not so severe as last year at this time, probably owing to the nearly complete reduction of the scale by the beetles during 1930.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Texas F. L. Thomas (May 1): The California red scale is multiplying very rapidly at Weslaco.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida H. T. Fernald (May 23): The purple scale is very abundant and bad in some places in the region of Orlando.

J. R. Watson (May 21): The purple scale is moderately abundant.

CITROPHILUS MEALYBUG (Iseudococcus gahani Green)

California Monthly News Letter, Los Angeles County Agri. Comm. (April 13) Field observations indicate that the new Australian mealybug parasite Coccophagus guernevi Compere has carried through the winter in satisfactory numbers and is serving as an important factor in holding the mealybug in check this spring. It seems to be well established throughout the infested areas of the

county owing to the liberations made during the past two years from material grown in the insectary. Present liberations are being somewhat restricted, as it is felt that little can be added to the parasite population already in the field. However, a stock of parasites is being maintained in the insectary for use as might become necessary.

CITRUS RUST MITE (Iphiloceptes oleivorus Ashm.)

Florida J. R. Watson (May 21): The citrus rust mite is moderately abundant and is beginning to appear on fruit in many sections.

H. T. Fernald (May 23): The citrus rust mite is very abundant, bad on unsprayed trees, in the region of Orlando.

Texas F. L. Thomas (May 20): Many complaints have been received of the citrus rust mite at Weslaco.

SIX-SPOTTED MITE (Tetranychus sexmaculatus Riley)

Florida J. R. Watson (May 21): The infestation of the six-spotted mite in the citrus belt is apparently dying down as the foliage matures, and what is apparently a fungus disease is attacking it.

RED SPIDER (Tetranychus telarius L.)

Mississippi H. M. Dietrich (May 23): Red spiders were very abundant on satsumas at Vernal on May 7; moderately abundant generally in southern Mississippi owing to dry weather.

PURPLE MITE (Tetranychus citri McG.)

Florida J. R. Watson (May 21): The purple mite is becoming rather widespread on citrus throughout the entire State.

A SWALLOWTAIL (Epilio cressphontes Cram.)

Mississippi H. Dietrich (May 23): The first larva was seen on satsuma at Lucedale on May 20.

A MOTH (Melissopus latiferreanus Wlsm.)

California Monthly News Letter, Los Angeles County Agr. Comm. (May 15): On at least three different occasions, over a period of eighteen months, specimens of the larva of this moth have been taken from oranges in Los Angeles County. Ordinarily the Catalina cherry moth in its larval stage attacks fruits of oak, beech, chestnut, walnut, and the Catalina cherry. The damage it does, like that of the well known orange tortrix, consists of a small hole through the skin of the fruit and injury to the edible portion caused by the feeding of the larva.

T R U C K - C R O P I N S E C T S

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Alabama J. M. Robinson (May 25): The vegetable weevil has been observed at Tuscaloosa.

Mississippi R. W. Harned (May 25): Specimens of the vegetable weevil, accompanied by complaints of serious injury to various garden plants, have been received during the past month from many localities.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

New Jersey Weekly News Letter, New Jersey State College of Agriculture (May 26): Striped cucumber beetles were active in Cape May County on May 23.

Pennsylvania J. N. Knull (May 8): First adults observed on blossoms at Mont Alto today.

West Virginia L. M. Pears (May 27): Adults of the striped cucumber beetle were observed at Morgantown from May 5 to 7.

Virginia W. J. Schoene (May 26): Striped cucumber beetles are unusually abundant on canteloupes and watermelons in Rockingham County.

Gould and Walker (May 25): At present the cucumber beetles are scarce in the cucumber fields at Norfolk.

Florida J. R. Watson (May 21): The striped cucumber beetle is extremely abundant in the Everglades.

Ohio T. H. Parks (May 22): The striped cucumber beetle began to appear in melon fields in Franklin County this week. Its appearance is earlier than usual.

Indiana J. J. Davis (May 26): Beetles seen at Bristol on April 27.

Nebraska M. H. Swenk (April 15 - May 15): The first striped cucumber beetle was observed on May 7 by D. B. Whelan,

Kansas H. R. Bryson (May 23): On May 15th Dr. R. L. Parker reported a large number of striped cucumber beetles coming from hibernation south of Manhattan in one locality. Apparently these were congregated in hibernation.

Oklahoma C. F. Stiles (May 21): The striped cucumber beetle is very abundant over two-thirds of the eastern part of the State.

Alabama K. L. Cockerham (May 23): The striped cucumber beetle is reported by Mr. O. T. Deen as being plentiful on cucumbers at Foley.



Mississippi

R. W. Harned and assistants (May): The striped cucumber beetle was doing slight damage to cucumber at Indianola on April 29 and it has been very abundant at Gulfport for a month causing severe damage to beans, melons, cucumbers, and squash and is also very abundant around Senatobia and Batesville.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Maryland

E. N. Cory (April 5): Two specimens were found on mustard at College Park today.

J. A. Hyslop (May 15): Observed the first adult this season eating petals of an iris in my garden at Avanel today.

Virginia

H. G. Walker (May 25): The 12-spotted cucumber beetle is scarce in the fields around Norfolk this year.

W. J. Schoene (May 26): Spotted cucumber beetles are unusually abundant on cantaloupes and watermelons in Rockingham County.

North Carolina

C. H. Brannon (May 20): The ~~spotted~~ cucumber beetle is causing widespread damage to cucumbers, cantaloupes, cotton, and tobacco.

Missouri

L. Haseman (May 23): P. H. Johnson found the first specimen of the spotted cucumber beetle this season May 21 at St. Louis and I took two specimens on iris May 22 at Columbia.

Texas

H. B. Hungerford (May 25): The first specimen was brought in May 19 from Lawrence.

Kansas

D. Isely (May 23): The 12-spotted cucumber beetle is unusually scarce this year. It is doubtful if it occurs in 1 per cent of its normal number. This scarcity is probably chargeable to the severe drought during the past season.

Alabama

J. M. Robinson (May 25): The spotted cucumber beetle is very abundant at Brewton and Auburn necessitating replanting of corn.

Mississippi

R. W. Harned (May): Severe damage, often requiring replanting of corn, has been reported from eighteen counties, indicating that this species is unusually abundant throughout the State.

Louisiana

W. E. Hinds (May 25): The spotted cucumber beetle is moderately abundant on many truck and field crops over the State.

Texas

F. L. Thomas (May 20): The 12-spotted cucumber beetle is moderately abundant at Weatherford. Full-grown larvae collected in the base of corn plants were sent in by the county agent.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror L.)

Oregon T. R. Chamberlin (April 30): Countless thousands of these beetles, deposited along fence rows near Forest Grove by flood waters of March 31 and April 1, were sprinkled with distillate and burned on the morning of April 2 before they had begun to leave. Practically all were females and full of eggs. It is estimated that from 80 to 90 per cent were destroyed in the burned areas.

FLEA BEETLES (Halticinae)

New York Weekly News Letter, New York State College of Agriculture (May): Flea beetles (several species) were causing a good deal of injury to seedling cabbage plants in Ontario County on May 11.

New Jersey Weekly News Letter, New Jersey State College of Agriculture (May): These insects are so numerous on truck crops in the southern part of the State that growers are spraying to protect their crops from injury. (Abstract J. A. H.)

Missouri L. Haseman (May 23): P. H. Johnson reports the horseradish flea beetle (Phyllotreta armoraciae Koch) quite abundant in St. Louis County on horseradishes May 22. Larvae in leaf stocks measured from 3 to 4 mm. in length.

Mississippi R. W. Harned (May): Flea beetles are apparently not unusually abundant. Reports have been received during the month of damage to eggplant in Stone County, to sweet potato in Adams County, and to tomatoes in Jefferson County.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Virginia H. G. Walker (May 25): The seed corn maggot has been excessively abundant this spring on bean and cucumber seed near Norfolk. Many fields had to be replanted. Some damage also occurred to corn.

Illinois W. P. Flint (May 19): The seed corn maggot has recently been reported from a number of points in Illinois injuring corn and beans.

Kentucky W. A. Price (May 25): The seed corn maggot is moderately abundant and was reported as damaging corn at Horse Cave and Paris.

Missouri L. Haseman (May 23): The seed corn maggot badly damaged corn, beans, and melon seeds in the forepart of the month in south-eastern and north central Missouri.

sas H. R. Bryson (May 23): The seed corn maggot was reported working in corn at Studley, on May 18. Also reported as attacking slowly germinating beans.

h G. F. Knowlton (May 6): The seed corn maggot caused some damage to melon seeds during the recent rainy period in Davis County.

CHANGA (Scapteriscus vicinus Scud.)

th Carolina R. W. Leiby (May 29): We have had more complaints than usual this spring of damage by this insect in the extreme eastern part of the state.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Jersey Weekly News Letter, New Jersey State College of Agriculture (May): These insects are showing increasing damage in southern New Jersey, and growers are spraying to protect their crop. (Abstract J. A. H.)

aware L. A. Stearns (May 22): Abundant enough to cause the first comment at Bridgeville on the date mentioned.

yland P. D. Sanders (May 27): The Colorado potato beetle is more abundant in the early potato section of the lower Eastern Shore of Maryland than normally.

st Virginia L. M. Peairs (May 27): A few adults of the Colorado potato beetle have been seen at Morgantown.

ginia H. G. Walker (May 25): The Colorado potato beetle is moderately abundant in Norfolk, Princess Anne, and Northampton Counties and exceedingly abundant in Accomac County, where in some fields there were an average of three or four egg-masses per plant. Most growers in this region have started to apply insecticides to their plants.

th Carolina W. A. Thomas (May 6): This insect was observed today depositing eggs not only on potatoes but also on clods of dirt, dead sticks, and weeds in the potato field, in the vicinity of Chadbourn. This habit of depositing eggs on objects other than solanaceous plants is rather unusual in this section. Although oviposition has been extremely heavy this season, the resulting larvae have not been so numerous as in previous years.

va H. E. Jaques (May 25): The Colorado potato beetle is scarce in Delaware and Henry Counties.



- Missouri L. Haseman (May 23): Occasional specimens of the Colorado potato beetle have been found on potatoes at Columbia since the first of the month.
- Oklahoma C. F. Stiles (May 21): The Colorado potato beetle is very abundant over the eastern three-fourths of the State.
- Mississippi F. A. Smith (May 22): The Colorado potato beetles are very bad on potatoes in Tate County.
- Louisiana W. E. Hinds (May 25): The Colorado potato beetle is scarce on potatoes.
- Idaho C. Wakeland (May 19): The Colorado potato beetle is very abundant on early potatoes and despositing eggs, at Lewiston.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

- North Carolina W. A. Thomas (May 11): This flea beetle has been prevalent for the last few days on most young tomato plants in this vicinity, some of the plants having been completely destroyed by their attacks.

STRIPED FLEA BEETLE (Phyllotreta vittata Fab.)

- Virginia H. G. Walker (May 25): Flea beetles are common in the Tidewater region and are exceptionally abundant in Accomac County on the Eastern Shore.
- Maryland P. D. Sanders (May 27): This flea beetle is more injurious to potatoes on the Eastern Shore than usual.

POTATO TUBER WORM (Phthorimaea operculella Zeller)

- Delaware L. A. Stearns (April 21): Specimens were taken from stored potatoes at College Farm, Agricultural Experiment Station, Newark. These moths emerged from April 14 to 18. (Determined by A. Busch)
- California Monthly News Letter, Los Angeles County Agricultural Commissioner Vol. 13, No. 4, (April 15): Infestations of the tuber moth in some sections of Los Angeles County have been particularly bad this year. In nonirrigated fields the pest has been most active. "More than twelve hundred lugs of new potatoes have been rejected in the Los Angeles wholesale markets since April 15."

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

- Indiana J. J. Davis (May 26): The cabbage worm was abundant in cabbage at Shoals May 13 and destructive to cauliflower at Greenfield, May 23.

North Dakota

J. A. Munro (May 22): Adults have been commonly seen since the early part of May. From present indications they will cause the usual amount of injury in gardens this season.

Missouri

L. Haseman (May 23): Butterflies are abundant at Columbia and St. Louis and worms are showing up on cabbage and horse-radish.

Mississippi

R. W. Harned and assistants (May): Complaints have been received all during the month of May. The injury, however, is not great. (Abstract G. M.)

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

North Carolina

W. A. Thomas (May 9): An unusually heavy infestation has recently developed on cabbages in the vicinity of Chadbourn. Thousands of moths have been observed flitting about the field in the late afternoon. The whitish areas in the leaves showing the points of insect injury are very conspicuous in most of the fields. There seem to be few parasites present at this time.

Mississippi

R. W. Harned and assistants (May): Heavy infestations on turnips late in April were reported from Stone County and early in May they were very numerous in cabbage in Forrest, Lee, Chickasaw, and Adams Counties. (Abstract J. A. H.)

CABBAGE LOOPER (Autographa brassicae Riley)

North Carolina

P. K. Harrison (May 1): The cabbage looper is injuring cabbage in home gardens at Fairfax.

Mississippi

W. L. Gray (May 20): The cabbage looper was moderately abundant on cabbage at Stanton, May 11.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Massachusetts

A. I. Bourne (May 23): Professor Whitcomb from the field station at Waltham reports finding the first eggs of the cabbage maggot on May 6.

Connecticut

W. T. Clark (May 15): I noted eggs of the cabbage maggot and on two plants small maggots had hatched at Baltic.

New York

Weekly News Letter, New York State College of Agriculture (May): Adult flies began emerging in the early part of May, and by the middle of the month were ovipositing in large numbers on early cabbage and seed beds, particularly in the central part of the State. (Abstract J. A. H.)

Pennsylvania

H. N. Worthley (May 6): The first eggs of the cabbage maggot were found May 6 at State College.

Wisconsin

E. L. Chambers (May 26): Cabbage and radishes have been hit by the cabbage maggot in spots throughout the State, according to our reports.

CABBAGE APHID (Brevicoryne brassicae L.)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (May): During the last week in the month these insects were increasing rapidly in southern New Jersey. It is suspected that they were introduced on plants shipped in from the south. (Abstract J. A. H.)

Virginia

G. E. Gould (May 20): The cabbage aphids that have been so abundant on kale and broccoli throughout the winter and spring have practically appeared owing to the numerous parasites and to wind and hail storms.

Ohio

T. H. Parks (May 25): Young cabbage plants were received from Henry County May 22 with the statement that cabbage aphid (Brevicoryne brassicae) are numerous and have appeared so early that serious trouble is feared.

Indiana

J. J. Davis (April 29): The cabbage aphid was reported April 13 from Manilla as a pest of cabbage and Brussels sprout and has already been noticed in conspicuous numbers this spring on shipped-in plants. (May 26): The cabbage aphid was abundant on cabbage at Attica, May 10.

Mississippi

R. B. Deen (May 22): Aphids on cabbage have been very numerous and have required control measures to prevent serious damage to field crops of cabbage, at Tupelo.

J. Milton (May 25): The cabbage aphid was found to be causing considerable injury to cabbage at Belmont on May 8.

HARLEQUIN BUG (Murgantia histrionica Hahn)

New Jersey

Weekly News Letter, New Jersey State College of Agriculture (May): Quite heavy infestations of this insect are appearing in portions of Cape May County. Mr. White reports as many as 8 or 10 on one stalk of cabbage.

Virginia

L. W. Brannon (May 20): The first harlequin bugs of the 193 season were found by H. G. Walker feeding on kale and broccoli in the fields at Norfolk on April 9. During the period April 13 - 30 a total of 1,275 overwintered adults were collected on nine rows of broccoli 275 feet long. The first eggs of the season were deposited in the insectary on April 20. Eggs were numerous in the field by April 27. The first hatching eggs of the season were found on May 12.

Florida

J. R. Watson (May 21): The harlequin bug is moderately abundant.



Alabama

J. M. Robinson (May 25): The harlequin bug is very abundant at Auburn.

STRIPED FLEA BEETLE (Phyllotreta vittata Koch)

New York

Weekly News Letter, New York State College of Agriculture (May 11): H. Glasgow reports that the cabbage flea beetles are very abundant in cabbage seedbeds generally this season and are likely to cause serious damage.

Geneva Experiment Station, Geneva, New York (May): The cabbage flea beetle is very abundant over western New York.

North Carolina

W. A. Thomas (May 19): These insects have recently transferred from pepper grass to the foliage and developing seed-pods of mustard and broccoli near the laboratory at Chadbourn. The foliage has been converted into sieves and the green seed-pods are withering and drying up on the plants. The insects are so numerous as to give some plants a blackish appearance.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

North Carolina

C. H. Brannon (May 18): Causing considerable damage to dewberries in Cumberland County.

Mississippi

State Plant Board (May 4): The first record of the strawberry weevil in Mississippi has just been reported by J. P. Kislanko, who found the weevils seriously damaging young berry plants at the Jackson-Harrison-Stone Junior College at Perkinston. The insects were very abundant, causing damage ranging from 25 per cent to 80 per cent of the crop. This is the first known record in Mississippi, although the insect has probably been in the State for many years, as it has been reported from practically every other State east of the Rocky Mountains.

STRAWBERRY ROOT WEEVILS (Curculionidae)

Oregon

D. C. Mote (April 24): The common weevil Brachyrhinus ovatus L. is moderately abundant and B. rugosostriatus Goeze is apparently scarce, as reported by J. Wilcox.

D. C. Mote (April 24): J. Wilcox reports the native weevils Dyslobus ursinus Horn and D. decoratus Lec. laying eggs. They are apparently more abundant this year than last.

A CURCULIONID (Tyloderma morbillosa Lec.)

Washington W. W. Baker (May 9): Eggs are abundant at Grand Mound at this date. About the same as the last two years.

STRAWBERRY LEAF ROLLER (Ancylis comptana Froehl.)

Michigan R. Hutson (May 6): This is to report that in Berrien County near Benton Harbor, adults of the strawberry leaf roller were flying on May 4.

Mississippi R. W. Harned (May 25): A slight infestation on strawberry was reported from Tupelo, May 13.

Utah G. F. Knowlton (May 23): Strawberry leaf rollers are causing damage to strawberry patches in Utah County.

STRAWBERRY CROWN MOTH (Aegeria rutilans Hy. Edw.)

Oregon D. C. Mote (April 24): Mr. Kenneth Gray reports that the strawberry crown moth is still in the larval stage in the winter cell.

STRAWBERRY ROOT WORM (Paria canella Fab.)

Connecticut W. E. Britton (May 9): The strawberry root worm is apparently feeding on old plants at Center Groton, but no great amount of injury has been caused.

New York Weekly News Letter, New York State College of Agriculture (May 18): The strawberry root worm is causing serious damage in several old strawberry beds in Dutchess County.

SAWFLIES (Tenthredinidae)

Washington W. W. Baker (May 18): Strawberries at Bellevue are being attacked by sawfly larvae. The infestation is rather general throughout the field but not particularly severe. This is the first instance that I have found of strawberries being attacked by slugs in cultivated fields. One solitary larva was taken in 1930 on a wild plant, near Puyallup.

APHIDS (Aphidae)

Arizona C. D. Lebert (April 6): A very heavy infestation of medium-sized, dark green aphids occurred in 50 acres of strawberries near Phoenix, April 6.

ASPARAGUS

ASPARAGUS BEETLES (Crioceris spp.)

- sachusetts A. I. Bourne (May 23): Professor Whitcomb reports that he noted asparagus beetles for the first time on May 9 at Waltham. This latter date coincides with our observations here at Amherst on the common asparagus beetle.
- aware L. A. Stearns (May 22 and 25): Asparagus beetles were very abundant on asparagus at Bridgeville and Blackbirds. They are more abundant than they were last year.
- th Carolina J. N. Tenhet (May): There is heavy infestation in practically every asparagus field in Allendale.
- iana J. J. Davis (May 26): The common asparagus beetle was reported abundant and destructive at Aurora, May 24.
- souri L. Haseman (May 23): P. H. Johnson took asparagus beetles in St. Louis County May 22.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- Jersey Weekly News Letter, New Jersey State College of Agriculture (May): Adult beetles have been observed in several bean fields in the southern part of the State during the last week in the month. (Abstract J. A. H.)
- yland P. D. Sanders (May 27): A few Mexican bean beetle adults and egg clusters were observed at Salisbury. They are scarce for this date.
- t Virginia L. M. Peairs (May 27): Adults of the Mexican bean beetle were observed as early as May 3 at Morgantown.
- ginia L. W. Brannon (May 20): The first Mexican bean beetle adult of the 1931 season was found feeding in the field on May 6. This record is five days later than that of the 1930 season. The first eggs of the 1931 season were found in the field on May 19. On May 19 a Mexican bean beetle adult was found feeding on soy beans, in Norfolk.
- G. E. Gould (May 25): In the hibernation cages we have an average survival of 34 per cent from four cages located in different types of woods in Norfolk. The cage in the pure pine woods already has a survival of over 50 per cent.
- th Carolina R. W. Leiby (May 29): Beans appear to be more heavily infested with the Mexican bean beetle this year than they were last year at this time.



Georgia

J. B. Gill (May 12): An infestation was first observed on May 7 on snap beans in gardens within the city of Albany. So far as my observations go, this is the first year that this pest occurred in this locality. Evidently this insect entered here from the north or west and not from the Thomasville section, where it has been a pest for many years. The infestation around Thomasville does not spread much. Present last year at Americus, which is 37 miles north of Albany, and spread has been southward. Slight infestation.

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Virginia

L. W. Brannon (May 20): The first adults observed feeding on beans in the field (May 6). This observation was made by H. G. Walker and myself, at Norfolk.

South Carolina

J. N. Tenhet (April 27): Injury to foliage of bunch snap beans by the bean leaf beetle is quite severe in many home gardens in Fairfax.

Illinois

W. P. Flint (May 19): The bean leaf beetle infestation as yet is very light in the Union and Pulaski County green bean sections.

Alabama

J. M. Robinson (May 25): The bean leaf beetle is moderately abundant at Hanceville, Auburn, and Montgomery.

Mississippi

R. W. Harned and assistants (May): During the latter half of May, the bean leaf beetle was reported as damaging beans in Alcorn, Prentiss, Tishomingo, Lee, George, Greene, Jones, Harrison, and Sunflower Counties.

CUCUMBERS

PICKLE WORM (Diaphania nitidalis Stoll)

Mississippi

J. P. Kislanko (May 20): The first appearance of pickle worm adults was noticed on May 16 in the light trap.

SQUASH

SQUASH BEETLE (Epilachna borealis Fab.)

South Carolina

P. K. Harrison (May 22): The first specimen of this season was collected on fern May 21 and on cantaloupe May 22 on the laboratory grounds at Fairfax.

SQUASH BUG (Anasa tristis DeG.)

G. F. Knowlton (May 20): A few adult squash bugs have been taken at Ogden, Farmington, and Salt Lake. Apparently they are only moderately abundant at the present time.

CELERY

CELERY LEAF-TIER (Phlyctaenia rubigalis Guen.)

C. F. Stahl (May 18): In the May issue of the Insect Pest Survey Bulletin P.123, I note that the celery leaf tier is reported as "moderately abundant." Of course there may be different interpretations of the word "moderately" but I think that the statement is misleading if this season is to be compared with previous ones. Certainly the tier has been scarce and, with the exception of the last few weeks of the crop, difficult to find.

ONIONS

ONION THRIPS (Thrips tabaci L.).

F. L. Thomas (May 21): The onion thrips has been reported as destroying the onion crop as San Angelo.

ONION MAGGOTS (Hylemyia antiqua Meig.)

Weekly News Letter, New Jersey State College of Agriculture (May 26): Onion maggots have caused some damage in Gloucester County.

SWEETPOTATO

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis Cr.)

K. L. Cockerham (May 21): Mr. W. B. Hollingsworth reports that flea beetles are very numerous in the vicinity of Picayune, damaging plants in the seed beds. The species is presumed to be the sweetpotato flea beetle.

R. W. Harned (May 25): Slight injury to sweetpotato plants by flea beetles was reported in a field in Adams County, and severe damage in Jackson; also severe damage in seed beds in Greene and George Counties.

MOTTLED TORTOISE BEETLE (Chirida guttata Oliv.)

Mississippi

H. Dietrich (May 23): A tortoise beetle was found on May 5 in some numbers and ovipositing on sweetpotatoes in bed at Lucedale.

BEETS

BEET LEAFHOPPER (Eutettix tenellus Baker)

Utah

G. F. Knowlton (May 16): The beet leafhopper is now distributed throughout most of the sugar-beet growing area of northern Utah, and considerable injury from curly-top is anticipated.

SUGAR-BEET ROOT MAGGOT (Tetanops aldrichi Hendel)

Utah

G. F. Knowlton (May 18): Adult flies are now abundant in the sugar-beet fields at Amalga, Benson, Cornish, and Trenton, in Cache Valley. A few have been observed at Hooper, in Weber County.

HOP FLEA BEETLE (Psylliodes punctulata Melsh.)

Utah

G. F. Knowlton (May 14): Hop flea beetles are damaging young sugar beets in some fields at Fielding and Richmond, and are present in all beet fields examined in northern Utah, but the damage is much less generally than during most years.

TOBACCO

TOBACCO BUDWORM (Heliothis virescens Fab.)

Florida

F. S. Chamberlin (May 16): The tobacco budworm is not so abundant as usual at this season of the year. The rains, however, have been sufficient to allow emergence of adults.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

Kentucky

W. A. Price (May 25): The tobacco flea beetle is doing much damage to tobacco in the bed.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Florida

F. S. Chamberlin (May 11): H. citri appears to be more abundant than usual and is causing some damage to the lower leaves of shade tobacco.



MUSHROOMS

A FUNGUS GNAT (Sciara sp.)

nsylvania

C. A. Thomas (May 7): Larvae of sciariid flies have caused considerable damage to cultivated mushrooms in Chester County this season.

MUSHROOM MITE (Tyroglyphus lintneri Osborn)

nsylvania

C. A. Thomas (May 7): The mushroom mite has been very abundant and destructive in a number of mushroom houses in Chester County during the past winter.

A MITE (Linopodes antennaeipes Banks)

Jersey

C. A. Thomas (March): During March, 1931, several houses heavily infested with this mite were found near Plainfield. In two houses the mushrooms were all killed, and many hundreds of these mites were present.

A SPRINGTAIL (Achorutes armatum Nic.)

nsylvania

C. A. Thomas (May 7): Springtails have caused considerable damage to cultivated mushrooms in Chester County this season.

A NOCTUID (Metalestra quadrisignata Walk.)

nsylvania

C. A. Thomas (May 7): Occasional examples have been noted of injury to cultivated mushrooms in Chester County by a Noctuid "looper;" M. quadrisignata. These are brought into the mushroom house with the casing soil in the fall. The caterpillars eat large holes into the caps, but the injury is usually not extensive and they soon disappear.

FOREST AND SHADE-TREE INSECTS.

CANKER WORMS: (Geometridae)

- Connecticut B. H. Walden (May 22): Alsophila pometaria Harr. is rather more abundant at New Haven and Hamden than average, but not so abundant as it has been during the past two years.
- Rhode Island A. E. Stene (May 21): Canker worms are likely to be fairly abundant if we may judge from present indications.
- New York Weekly News Letter, N. Y. State College of Agriculture (May 25): Spring canker worms (Paleacrita vernata Peck) were observed May 19 in Ulster County.
- Minnesota A. G. Ruggles and assistants (May): The fall canker worm is quite abundant this spring in several apple orchards in the vicinity of Minneapolis and St. Paul. (Abstract J.A.H.)
- North Dakota J. A. Munro (May 22): On May 18 the first-stage larvae of the cankerworm were noticed on trees.
- Kansas H. B. Hungerford (May 25): Spring canker worms are very abundant at Lawrence and Ottawa.
- H. R. Bryson (May 23): On May 8 Dr. E. G. Kelly reports canker worms very abundant in the southeastern section of Kansas. Reported as defoliating apple, elm, and other trees.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

- Virginia Wm. Middleton (May 8): On May 31, 1930, I reported the activities of the forest tent caterpillar which was defoliating most of the trees over considerable areas in Buckingham County. I have just received a letter from Mr. L. T. Stegar of Warren on whose farm I first observed the activities of this caterpillar. Mr. Stegar reports that the caterpillars have reappeared this year by the millions and are playing havoc all through this section, webbing from the limbs to the ground and to housetops, literally covering the houses and ground.
- W. J. Phillips (May 15): There is a serious outbreak of the forest tent caterpillar in the neighborhood of Scottsville, Fluvanna County. Several hundred acres of forest land have been entirely defoliated. Mr. Maddox, the Assistant State Forester here, informs me that a like outbreak is in progress in Buckingham County. This is the worst outbreak I have ever witnessed.

Washington Evening Star (May 26): Presence of the destructive tent caterpillar in Pittsylvania County has been reported. The pest has appeared in the northern part of the county, but as yet has not been noted in the Danville section.

GYPSY MOTH (Porthetria dispar L.)

Vermont

H. L. Bailey (May 25): Gypsy moths were found hatching at Fairlee May 5; scattering egg masses were found in isolated infestations in Fairlee and Newbury.

TWO-LINED CHESTNUT BORER (Agrilus bilineatus Web.)

New England

E. P. Felt (May 26): The two-lined chestnut borer is generally prevalent in the Philadelphia area, somewhat extensive wooded areas being badly infested. It is also a troublesome pest in southwestern New England and southeastern New York.

A S H

A SAWFLY (Tomostethus bardus Say)

Maryland

G. S. Langford (May 11): Observed a sawfly attacking ash in Prince Georges County.

District of  
Columbia

G. Myers (May 18): Pale green larvae were collected on ash along Seventh Street, Washington.

CARPENTER WORM (Prionoxystus robiniae Peck)

Indiana

J. J. Davis (April 29): The carpenter worm was observed very abundant in white oak at Colfax, March 30.

Arizona

C. D. Lebert (April 27): The goat moth has been very much in evidence this month. The moths are attracted to lights in considerable numbers, and ash trees in the city of Phoenix contain many larval tunnels.

BEECH

BEECH SCALE (Cryptococcus fagi Baer.)

Massachusetts

John V. Schaffner, Jr. (May 18): Infestations of the beech scale have been reported on American beech at Forest Hills, Jamaica Plain, and Stoneham. As yet no serious damage has been done by this pest.



B I R C H

BIRCH CASE BEARER (Coleophora salmani Hein.)

Maine

H. B. Pierson (May 26): Heavy feeding on white birch is reported at Mt. Desert Island.

C A T A L P A

CATALPHA SPHINX (Ceratomia catalpae Boisd.)

Mississippi

H. Dietrich (May 23): The catalpa sphinx eggs hatched at Leakesville on May 8 and at Lucedale on May 11. These caterpillars are very much sought after by the local fishermen. Two thousand mature larvae will be harvested from a single large catalpa tree, and sold for one cent apiece. This brings in a good income.

C Y P R E S S

CYPRESS BARK SCALE (Ehrhornia cupressi Ehrh.)

California

Monthly News Letter, Los Angeles County Agriculture Commission (April 15): The cypress bark scale and two species of bark beetles are doing serious damage to cypress trees in some parts of Los Angeles County. The cypress bark scale has been found destroying cypress trees, particularly in hedge rows and wind-breaks, in the eastern and southern parts of the county, and is serious on trees where it has gained a foothold. The attack of the beetles is quite heavy in some districts but actual killing of the trees appears to occur mostly in cases where the trees are in a weakened condition, due to a lack of water or similar cultural conditions. Strong trees are quite successful in overcoming the work of the beetles.

E L M

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

Rhode Island

A. E. Stone (Apr. 25): Overwintering beetles are abundant on elm and other trees at Narragansett. (May 21): Elm beetles are likely to be fairly abundant if we may judge from present indications.

ELM FLEA BEETLE (Haltica ulmi Woods)

Rhode Island A. E. Stene (May 23): Have found a place where the elm flea beetle, observed earlier in the spring, is apparently doing more damage to elms than the elm leaf beetle, at Narragansett.

WOOLY APHIS (Eriosoma lanigerum Haussn.)

Virginia Walker & Gould (May 25): The woolly aphis was observed to be infesting elm at Eastville. About half of the leaves on the tree were curled.

EUROPEAN ELM SCALE (Gossyparia ulmi L.)

Ohio E. W. Mendenhall (May 15): The elm trees in the northern part of Columbus are badly infested.

HEMLOCK

HEMLOCK BARK BORER (Melanophila fulvoguttata Harr.)

Pennsylvania J. N. Knull (May 10): First adults were observed May 10 on hemlock at Mont Alto. Many larvae are in the prepupal stage.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

Maine H. B. Pierson (May 26): Larch stands throughout a large section of Maine appear as if scorched by fire.

Vermont Harold L. Bailey (May 25): The larch case bearer has been reported as very abundant in the southwestern part of the State. This insect has been sufficiently plentiful to brown the foliage of larch in at least some sections of the State during each of the past seven years.

Pennsylvania J. N. Knull (May 21): C. laricella is doing damage to foliage of larch trees from 1 foot to 3 feet high in a plantation at Lake Ariel.

MAPLE

SADDLED PROMINENT (Heterocampa guttivitta Walk.)

Vermont Harold L. Bailey (May 25): From the healthy condition of pupae found in maple sugar orchards in Bennington County, which were stripped by the saddled prominent last summer, it

would appear that this insect may again be abundant this season. Adults had not emerged May 25.

### O A K

#### HORNED OAK GALL (Andricus cornigerus O.S.)

New England E. P. Felt (May 26): The horned oak gall is common on the scarlet oak in southern New England, though rarely as abundant and injurious as the species occurring upon willow oak.

#### OAK GALLS (Andricus spp.)

New England and Middle Atlantic States E. P. Felt (May 26): The white oak club gall (Andricus clavulus O.S.) is moderately common in both the Philadelphia and New York areas, occasionally becoming very abundant upon individual trees or groups of trees.

E. P. Felt (May 26): The horned knotty gall of the willow oak, Andricus clavigerus Ashm., is very common in New Jersey and southward, frequently becoming so abundant as to kill many of the lower limbs and sometimes a considerable proportion of the tree.

#### A PSYLLID GALL (Psyllidae)

Florida C. F. Stahl (May 18): Several times this year our attention has been called to injury to oak leaves on trees growing along the streets in Sanford. The injury is due to psyllid galls. Practically all of the leaves on some species of oaks are seriously injured.

#### GOLDEN OAK SCALE (Asterolecanium variolosum Ratz.)

New England and Middle Atlantic States E. P. Felt (May 26): The golden oak scale is widely distributed in southern New England, southern New York, northern New Jersey, and Eastern Pennsylvania, at least. It is found not only in the vicinity of cities, but in woods miles from important centers and distant from frequently traveled routes. It is a dangerous species on relatively valuable trees on lawns and in parks.

### P I N E

#### EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

New England and Middle Atlantic States E. P. Felt (May 26): The European pine shoot moth is becoming generally prevalent in southern New England, Southern New York and New Jersey areas. It is particularly



injurious to recent plantings of the more vigorous growing pines, and in some cases over 90 per cent of the trees are marked by serious deformation and stunting.

Massachusetts J. V. Schaffner, Jr. (May 15): There are severe infestations on Austrian and Mugho pines, mostly ornamental plantings on lawns in the city of Newton; also a very heavy infestation on Austrian pine (about 100 trees) in a cemetery at Brookline. The trees are badly distorted.

Connecticut W. E. Britton (May 8): Trunk injury. There are heavy infestations in forest plantings of red pine at Easton and of Scotch and red pines at Harden, and a light infestation in a forest planting of red pine at Branford.

Pennsylvania G. B. Slesman (May 8): The European pine shoot moth is doing serious damage to Scotch pines growing on the Pennsylvania Railroad Nursery, Bristol. With the exception of the infestation at Chestnut Hill found last year, this is the only infestation known to occur in Pennsylvania.

J. R. Stear (May 18): Red pine tips infested by this insect were collected at Ligonier May 18. (Determined by C. Heinrich)

NANTUCKET SHOOT MOTH (Rhyacionia frustrana Comst.)

Pennsylvania G. B. Slesman (May 8): The Nantucket shoot moth is doing serious damage to infested tips of Pinus sylvestris, P. strobus, and P. rigida, growing at the Hermit Lane Nursery, Philadelphia. This is the only place that it is found in the State.

PINE NEEDLE MINER (Paralechia pinifoliella Chamb.)

Massachusetts J. V. Schaffner, Jr.: Paralechia pinifoliella is common to abundant on Pinus rigida in several localities of eastern Massachusetts.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Michigan R. H. Pettit (May 25): Recently the work of the white pine weevil was sent in from Dunbar Experiment Station, Sault Ste. Marie, on red pine. This species destructive wherever white pine nursery stock is grown in quantity.

Wisconsin E. L. Chambers (May 26): Blister rust crews have been reporting serious losses from white pine weevil in the vicinities of Superior and Eagle River.

A WEEVIL (Pissodes approxiratus Hopk.)

Pennsylvania J. N. Knull (April 20): First adults were observed on white pine at Caledonia on this date. (May 12): Living white pines at Reading affected by the 1930 drought are infested at nodes with this insect. Undoubtedly the insect contributed largely to the death of numerous trees in the plantations. Larvae overwintering in trunks.

PALES WEEVIL (Hylobius pales Boh.)

Pennsylvania. J. N. Knull (May 29): First adults were observed on white pine on April 20. The 1930 feeding is showing up on the branches of white pine at this season of the year. Branches with very slight feeding have turned brown and stand out against the green background.

ELEGANT PINE WEEVIL (Scythropus elegans Couper)

Pennsylvania J. N. Knull (May 12): At Old Forge, Pond Bark, Mont Alto and State Forest, adults were flying in great numbers in white pine plantations on warm days from the middle of April to date. (Det. L. L. Buchanan.)

BARK BEETLE (Ips spp.)

Wisconsin E. L. Chambers (May 26): In the northern half of the State numerous white and Norway pines are being found by the blister rust crews heavily infested with bark beetles. The trees attacked were apparently weakened from the effects of last summer's drought and the heavy infestation of the pine bark louse.

PINE BARK APHID (Cherres pinicorticis Fitch)

Wisconsin E. L. Chambers (May 26): White and Norway pines throughout the northern part of the State are heavily infested with the pine bark louse, aided by favorable dry weather. More than 120,000 transplants had to be destroyed in a forest nursery because of unusually severe infestation.

SCOTCH PINE LECANIUM (Toureyella nurisraticum P. & McD.)

Wisconsin E. L. Chambers (May 26): Severe infestations of the Scotch pine scale are being reported again throughout the northern portion of the State. Large numbers of young Jack pine trees were killed outright by the pest last summer, aided by severe drought, in the vicinity of Juneau and Dunn Counties.

Mississippi H. Dietrich (May 23): T. muristratica is very abundant on young pines along the Escatawpa River, George County.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

- Massachusetts J. V. Schaffner, Jr. (May 15): Many ornamental plantings of ~~Mugho~~ and ~~Austrian~~ pine in sections of the city of Newton are heavily infested.
- Delaware L. A. Stearns (May 22): The pine leaf scale is attacking pine at Dover.
- New England and Pennsylvania E. P. Felt (May 26): The pine leaf scale is locally abundant upon the Austrian pine, especially in the southern New England and in the Philadelphia area.
- Minnesota A. G. Ruggles (May 22): Very abundant in spots over the State. Eggs at St. Paul, Redwing and Lake City hatched last week. It has been too cold for much migration of young yet.
- Mississippi H. Dietrich (May 23): C. pinifoliae and Chrysomphalus/perseae Comst. were killing young pines on Whiskey Creek, George County, in April.
- Wisconsin E. L. Chambers (May 26): Several blue spruce trees in ornamental plantings and native white pine and Norway pine near LaCrosse and Prairie du Chien were found infested.

BLACK PINE LEAF SCALE (Aspidiotus pini Comst.)

- Wisconsin E. L. Chambers (May 26): The first report of the black pine leaf scale injuring jack pine was received recently from LaCrosse. The infested branch submitted for examination was completely covered with the scales, causing the needles on the ends of the twigs to turn brown.

SPRUCE

A NEEDLE MINER (Hexirene albolineana Kearf.)

- Nebraska M. H. Swenk (April 15-May 15): During the past fall, winter and spring, a number of serious infestations of blue spruce with a needle miner were discovered in Lincoln. During the second week in May similar infestations were found in Norfolk. The exact species has not been determined but is suspected to be H. albolineana.

SPRUCE NEEDLE MINER (Epinotia nanana Treitschko)

- Maine J. V. Schaffner, Jr. (May 22): Observations made to date in parts of Sagadahoc and Lincoln Counties, Maine, show that



E. nanana is again locally abundant, especially near the sea coast. However, in most cases observed, the severe infestations do not seem to be in the same spots as last year.

H. B. Pierson: Heavy outbreaks of the spruce web worm are occurring along the coast from Harpswell to Penaquid.

SPRUCE MITE (Paratetranychus unguis Jacobi)

Michigan

R. H. Pettit (May 25): On blue spruce recently there has been considerable complaint about this mite. This insect occurs on Norway spruce in greatest numbers, but is to be found on other spruce as well.

WILLOW

WILLOW BORER(Cryptorhynchus lapathi L.)

Washington

Wt. W. Baker (May 23): At Tacoma damage has occurred for two or three years past and it is more severe this season. Adults were collected around Puyallup in 1929 though no damage was noted on any of the trees.

INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

APHIDS (Aphidae)

Mississippi R. W. Harned and assistants (May): A number of species of aphids are seriously infesting many ornamental shrubs and flowering plants throughout the State. Among the plants infested were rose, spirea, sweet pea, chrysanthemum, and viburnum. (Abstract J.A.H.)

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut R. B. Friend (May): L: L: Larvae are in about the usual abundance in lawns this spring.

A LEAF-CUTTER BEE (Andrena perplexa Smith)

Maryland E. N. Cory (April 22): An average of 62 nests per square yard were found on the lawns at Quantico.

CABBAGE LOOPER (Autographa brassicae Riley)

South Carolina J. N. Tenhet (May 22): This insect is attacking nasturtium, snapdragon, salvia, petunia, and dahlia at Fairfax, snapdragons being entirely defoliated.

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Wisconsin E. L. Chambers (May 26): Heavy losses occurred in several greenhouse establishments in the vicinity of Milwaukee to cyclamen, geraniums, and chrysanthemums during May.

RED SPIDER (Tetranychus telarius L.)

Ohio E. W. Mendenhall (May 25): In some cases the red spider mite has been quite abundant on chrysanthemum plants in greenhouses.

Alabama J. M. Robinson (May 25): The red spider is moderately abundant on hydrangea at Millport.

Mississippi W. L. Gray (May 20): The red spider was found early in the month on privet hedge, grass, violets, and other ornamentals in the southwestern five counties, Adams, and adjoining counties.

Arizona

C. D. Lebert (May 22): Extremely severe injury by this mite to conifers, especially Italian cypress, was recorded in the Phoenix area during May. Many of the trees were noticed to be entirely webbed and very much discolored.

ARBORVITAE

AN APHID (Dilachnus thujaefolia Theob.)

Mississippi

H. Dietrich (May 23): This aphid has increased to such numbers on arborvitae at Lucedale that control measures had to be adopted.

Arizona

C. D. Lebert (April 27): The arborvitae aphid has been extremely numerous this season. Many trees show marked effects of the pest in the Phoenix area. Lady beetles are very numerous on arborvitae, where they have been feeding on the plant lice.

ASTER

EUROPEAN HORNET (Vespa crabro L.)

Maryland  
and  
Delaware

E. I. Felt (April 30): The European hornet has been observed recently working on tree box at both Wilmington, Del., and Annapolis, Md. Even good sized stems have been partially to nearly completely girdled.

CEDAR

DEODAR WEEVIL (Pissodes deodarae Horn.)

Mississippi

A. W. Harned (May 25): A correspondent at Greenwood sent to this office four small Cedrus deodara trees, all of which were heavily infested.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluokalani Kirk.)

Mississippi

H. Dietrich (May 23): The crepe myrtle aphid is very abundant on crepe myrtle at Leakesville.



EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

abana J. M. Robinson (May 25): The euonymus scale is moderately abundant on Japonica at Greensboro.

ssissippi J. E. McEvilly (May 21): Euonymus japonica plantings in McComb have been severely attacked by the euonymus scale.

FERN

FERN SCALE (Hemichionaspis aspidistrae Sign.)

proseka M. H. Swenk (April 15-May 15): During the last half of April several correspondents reported infestations of the fern scale.

FLORIDA FLOWER THRIPS (Frankliniella tritici bispinosa Morg.)

orida J. R. Watson (May 21): The Florida flower thrips was responsible for some damage to Asparagus plumosus beds in some ferneries about Leesburg.

FUSCHIA

GREENHOUSE WHITE FLY (Trialeurodes vaporariorum Westw.)

io E. W. Mendenhall (May 25): In one of the greenhouses in Circleville the whitefly is so bad on fuchsia plants that it has rendered them unsaleable.

JUNIPER

JUNIPER WEBWORM (Dichomeris marginellus Fab.)

necticut W. E. Britton (May 9): Material received from Norwalk.

laware L. A. Stearns (May 22): Juniper webworms were attacking juniper at Dover on the date mentioned.

ryland E. E. Cory (April 30): This is the second finding of the juniper webworm in Maryland this year. The first was during the winter months in Baltimore. In each case the insect was found on Irish juniper.

West Virginia L. W. Teairs (May 27): One record of juniper webworm on Juniper at Charleston has been received.

Ohio E. W. Mendenhall (May 25): There is a severe outbreak of the juniper webworm in one of the nurseries at Fainesville, Lake County.

#### MAGNOLIA

##### TULIP TREE SCALE (Toumeyella liriodendri Gmel.)

Mississippi R. F. Colner (May 19): The tulip tree soft scale was moderately abundant on Magnolia fuscata in the vicinity of Pascagoula, May 6.

#### OLEANDER

##### OLEANDER SCALE (Aspidiotus hederæ Vallot)

Nebraska M. H. Swenk (Apr. 15-May 15): During the last half of April several correspondents reported infestations.

#### ROSE

##### THRIPS (Thysanoptera)

Mississippi R. W. Harned (May 25): Roses in all parts of the State have been more or less injured by thrips this spring. A correspondent at Aberdeen, Monroe County, reported severe injury to blackberries by thrips.

##### ROSE SAWFLY (Caliroa aethions Fab.)

Ohio E. W. Mendenhall (May 23): I find rose bushes in an outdoor planting in Columbus infested with rose slugs, the leaves being skeletonized.

#### SNOWBALL

##### A SCALE (Chioaspidis longiloba Cooley)

Mississippi H. Dietrich (May 23): This scale was killing Styrax americana along the Escatawpa River in George County on May 1.

SNOWBALL APHID (Anuraphis viburnicola Gill.)

G. F. Knowlton (May 19): The snowball aphid is damaging snowballs at Salt Lake City and Grantsville. The leaves are badly curled, and the flowers attacked in severe cases.

YEW

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

E. I. Felt (May 26): The black vine weevil is developing as a somewhat serious pest of Taxus in southern New England, New York, and presumably New Jersey.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

SALT MARSH MOSQUITO (Aedes sollicitans Walk.)

PUNKIE (Culicoides canithorax Hoffman)

H. Dietrich (May 23): A. sollicitans and C. canithorax were extremely abundant on the Mississippi coast at Bellefontaine, 7 miles east of Ocean Springs, all the month. This is a virgin section of coast and these two insects were so thick one had to stay right on the beach where the wind kept them back.

BLACK FLIES (Simulium sp.)

R. B. Friend (May): Reported very abundant at Middletown, Hamden, and North Plain. Unusually annoying.

FLEAS (Ctenocephalus spp.)

J. N. Tenhet (May 15): One house and premises have become infested already this season with the cat flea Ctenocephalus felis Bouche).

O. I. Sharp (May 1): Fleas are unusually abundant this spring and have caused considerably annoyance to mules, hogs, and other domestic animals as well as man. On one farm they annoyed mules to the extent that treatment had to be given daily.



Indiana J. J. Davis (April 29): Fleas were reported abundant in houses and farm buildings at Markleville, Mt. Vernon, and Westfield, April 21-25.

Arizona C. D. Lebert (May 22): A severe infestation of C. canis Curtis was found in a Phoenix residence. These pests were in the house, lawns, driveway, and dog yard. The residents had been severely bitten.

#### CHIGGERS (Trombicula irritans Riley)

Mississippi H. Dietrich (May 23): Chiggers are appearing again in good numbers in George County.

#### CATTLE

##### CATTLE GRUBS (Hypoderma spp.)

North Dakota J. C. Russell through J. A. Munro (April 20): Cattle grubs are moderately abundant at Golden Valley.

H. W. Herbison through J. A. Munro (April 20): Cattle grubs are moderately abundant in Benson and Ramsey Counties.

Kansas H. R. Bryson (May 23): Ox warbles have been reported as unusually numerous this past winter by E. G. Kelly.

##### “MIDGES” (Chironomidae)

North Carolina W. A. Thomas (May 12): Great swarms of these insects were observed attacking cattle in the late afternoon of May 12 and the early morning of May 13. They were especially noticeable about the udder where they were so numerous as to give it a bluish appearance. The following days there were only a few of these insects present about the cattle.

#### HORSES

##### BLACK FLIES (Simulium sp.)

Kansas H. R. Bryson (May 23): Black flies were reported by E. G. Kelly (May 1) as causing annoyance to both man and beast at Freedonia. No running water was within a half mile.

##### “MIDGES” (Calanidae)

HORSE FLIES (Tabanidae)

rgia D. G. Hall (May 21): There is an abundance of "greenhead" Tabanus costalis Fab.) at Wilmington Island. I had no idea that this species ever became so abundant or annoying to man as they have become here. An interesting point is that this species evidently does not occur in large numbers far from the coast at Savannah.

Mississippi H. Dietrich (May 23): T. punilus Macq., a horse fly, was present in goodly numbers on the Mississippi coast.

OTHER DOMESTIC ANIMALS

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

th Carolina J. N. Tenhet (May 21): This flea seems unusually abundant on dogs and cats in this locality.

SHEEP TICK (Melophagus ovinus L.)

iana J. J. Davis (April 29): The sheep tick was very common at Noblesville, April 9.

SHEEP SCAB MITE (Psoroptes ovis Her.)

sas H. R. Bryson (May 23): The sheep scab mite is abundant in Neosho, and Crawford Counties.

HOUSEHOLD AND STORED-PRODUCT

INSECTS

TERMITES (Reticulitermes spp.)

iana J. J. Davis (May 26): We continue to receive reports of destruction by termites from all parts of the State. Definite reports during the past month have come from Bloomfield, Eldhart, Ft. Wayne, Hymera, Lafayette, Lebanon, Linton, Madison, New Albany, Plymouth, Rockville, and West Lafayette.

inois W. F. Flint (May 19): Large numbers of reports of termites and the appearance of termite swarms have come from many points in central, north central, and southern Illinois.

- Michigan R. H. Tettit (May 25): White ants are apparently becoming increasingly important in Michigan. In several instances large warehouses as well as dwellings have been almost a total loss before the cause of the trouble was discovered.
- Missouri L. Haseman (May 23): Termite complaints continue to come in great numbers from all parts of the State.
- Alabama J. M. Robinson (May 25): Termites in houses in Birmingham and Troy and on flowers at Alexander City. Swarming at Auburn May 24.
- Mississippi R. W. Harned and assistants (May): Termites are doing considerable damage to buildings in Monroe, Alcorn, Prentiss, Jones, Claiborne, Grenada, Washington, Bolivar, Sunflower, Coahoma, Lee, Union, Hancock, Adams, Wilkinson, and Pike Counties.

#### ANTS (Formicidae)

- Indiana J. J. Davis (May 26): Ants were reported abundant in dwellings at Princeton, and Swayzee and in Hamilton County, Ind. In the lawn they were reported from Swayzee, Hamilton County, Indianapolis, and Ft. Wayne. They were reported as destructive last year to grapes at Akron.
- Nebraska M. H. Swenk (Apr. 15-May 15): Beginning April 24 and continuing to date, there have been an unusual number of complaints of ants in houses. These relate to a variety of species, often in combination, principally Camponotus herculeanus pennsylvanicus DeG., Formica fusca L., Formica rufa obscuripes Forel, and Solenopsis molesta Say.

#### EUROPEAN EARWIG (Forficula auricularia L.)

- Oregon D. C. Mote (April 24): R. Dimick reports that nymphal earwigs are beginning to hatch (since the middle of the month) at Corvallis. He reports that the first Digonichaeta setipennis Fall. earwig parasite emerged from the puparium April 20 at the Portland insectary.

#### FALSE CHINCH BUG (Nysius ericae Schill.)

- Arizona C. D. Lebert (May 22): The falsechinch bug has been appearing in great numbers from grassy areas and migrating across lawns and into dwellings in Phoenix, where, during the first part of May, they caused much annoyance.



BOXELDER BUG (Lentocoris trivittatus Say)

G. F. Knowlton (May 21): The boxelder bug is scattered and depositing large numbers of eggs at the present time. Nymphs are now becoming fairly abundant. This insect is causing very little annoyance in houses at the present time.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

R. W. Harned (May 25): Larvae were reported as causing serious injury to upholstered furniture by a correspondent at Anory on May 9.

POWDER-POST BEETLES (Bostrichidae)

M. H. Swenk (April 15-May 15): A Hold County correspondent reported that a barn made of cottonwood lumber, built about eight years ago, had been very extensively damaged by powder-post beetles.

CLOVER MITE (Bryobia praetiosa Koch)

T. H. Parks (May 16): A correspondent from London asks for assistance in stopping mites from entering a house. Specimens sent proved to be this species.

J. J. Davis: Clover mites were annoying in dwellings at Fort Wayne, April 27, and at Mentone, May 4.

C. L. Fluke (May 21): Clover mites have been present at Green Bay, Brown County, since last October and are still moving in.

E. L. Chambers (May 27): Two complaints were received from residents in Milwaukee to the effect that the clover mite was overrunning their homes.

## PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from "News Letter," Aug., 1931.

(Not for publication)

PARLATORIA DATE SCALE (Parlatoria blanchardi Targ.)

Two palms, one in a commercial garden and one an ornamental palm, were found infested in the Imperial Valley and defoliated and torched. Eight palms of no commercial value were found infested in the Coachella Valley and were dug out and destroyed. In the same areas 106,683 palm inspections were made during the quarter ending March 31, and 21 infested palms were found. Only three of these were in commercial gardens-- one in the Imperial Valley and two in the Coachella Valley. Of the remaining 18, two were ornamental date palms and one a Canary Island palm, which were defoliated and torched, and 15 were date palms of no value which were dug out and destroyed.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

On March 7, 74 dead larvae were taken from a pillow made of seed cotton, lint, wool, and mohair. The pillow originated at Presidio, Tex., and appeared to be three or four years old, which probably accounts for the fact that all of the specimens were dead. This is the largest number of specimens ever taken from an interception at any of our road stations.

GYPSY MOTH (Porthetria dispar L.)

The scouting has resulted in finding infestation in several towns, but so far the towns of New Marlboro, Sandisfield, and Sheffield, Mass., are more seriously infested than any others in the zone. It is expected that the work in Piscataway and Hillsboro Townships, New Jersey, will be finished about the middle of April. If no further infestations were found, this will complete the scouting work planned for New Jersey this season except for checking up work in the vicinity of infestations that were discovered in the townships of North Plainfield and Warren during the fiscal year 1928.

BROWN-TAIL MOTH (Nyctia phaeorrhoea Don.)

The brown-tail moth infestation, as indicated by the presence of the hibernating webs, is heavier than usual in southeastern Maine and eastern New Hampshire. In Maine there is an infestation in most of the cities and towns south of Augusta and west to the New Hampshire state line, and in some cases the infestations are heavy, particularly on apple, pear and cherry. State officials in Maine have notified the proper authorities in the cities and towns as to the proper control methods, and the cutting

and burning of hibernating webs is being done in some places. Similar work is being done in New Hampshire by the State and local authorities, as well as by some individuals. In Massachusetts there is a local moth superintendent in each of the infested towns, and in most cases the hibernating webs of the brown-tail moth are removed and burned each year.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

The European corn borer infestations in Upper Montclair Township in Essex County, New Jersey, has been cleaned up jointly by the owners of the property, necessitating no clean-up by the Federal or State Department.



INSECT CONDITIONS IN GUATEMALA DURING MARCH AND APRIL, 1931

Marston Bates

12 Calle Oriente No. 1, Guatemala.

The coffee cricket seems to be following the same cycle this year as last: no new oviposition scars have been noted since March. An adult cricket found on the coffee was determined as Paroecanthus guatemalae Saussure by Prof. T. H. Hubbell, and as the juveniles that emerged from the egg scars would seem to belong to this or some allied genus, it seems likely that this species is causing the trouble; but nothing definite can be determined without further study.

Saissetia hemisphaerica Targ. is a common and widely distributed coffee scale in Guatemala, but one that rarely occurs in injurious numbers. A severe infestation was found in April, however, on coffee in the Barberena regions. Severe infestations of realy bugs are also reported from various places, especially higher altitudes, in the cloud zone.

Specimens of Diaphania nitidalis Stoll. were sent in for determination and advice from the south coast, with the comment that they were doing considerable damage to a cucumber planting. The insect has also been quite common in cucumber fruits offered for sale in the city market during the past two months.

Larvae of Elateridae were again found doing considerable damage to potatoes. An undetermined flea beetle was also found to be causing considerable injury to this plant in the Tecpan region.

Cutworms were reported as doing considerable damage to alfalfa in certain regions. Adults were bred but have not as yet been determined.

The pine forests at higher elevations in Guatemala are continuing to die out, apparently because of insect attack, so that in some regions whole mountainsides will not have a living tree left. The insects that have been collected from these dying pines include: Ips cribricollis, Eich. Dendroctonus mexicanus and D. adjunctus, Flandr.

Honk.

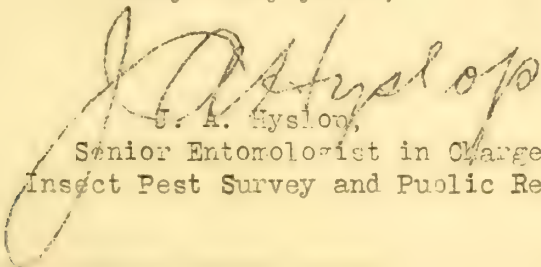
UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Entomology  
Washington, D. C.

Insect Pest Survey

June 11, 1931.

Due to a typographical error in paging the Insect Pest Survey Bulletin Volume 11, No. 4, June, 1931 the order of the text from pages 235 to 238 is disconnected. The enclosed corrected pages should be substituted before binding the volume as the index will refer to the corrected pagination.

Very truly yours,

  
T. A. Hyslop,  
Senior Entomologist in Charge,  
Insect Pest Survey and Public Relations.

JAH/f





INSECT CONDITIONS IN PORTO RICO DURING APRIL, 1931.

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico.

About 10 per cent, by actual count, of the canes were infested on several varieties in experimental plots by the sugarcane moth borer (Diatraea saccharalis Fab.) at the Central Ignalada near Mayaguez on April 21-23. (M.D.L. and F. Sein, Jr.)

Moths of the sugarcane root-caterpillar (Perforadix sacchari Sein) were common April 21-23 at Mayaguez where they were observed diving, after short flights, into the cut trash on the ground, the cane having been only just cut. (M.D.L. and F.S.)

The West Indian cane weevil (Motamasius hemipterus L.) is fairly common April 13-15 at Guyana and there is a very light infestation at Mayaguez April 21-23 in large cane variety experimental plots in which we are making detailed Diatraea counts. This insect is reported as abundant and generally distributed in banana plants on about 100 farms in which Mr. Jesus Gomez, Agricultural Agent of Hurracao, was surveying during the month at Guyanilla for Cosmopolites sordidus Germ. (M.D.L. and F.S.)

The pink leaf sheath bug (Lasiochilus divisus Champion) was fairly common in all stages in a large experimental plot comprising 5 varieties of sugarcane at the Central Ignalada at Mayaguez April 21-23. (M.D.L. and F.S.)

The yellow cane aphid (Sipha flava Forbes) was reported on April 24 by the manager of a large central at Cabo Rojo to be much less serious than last month on sugarcane owing to rains during April but he stated that there was still some infestation.

The cane mealybug (Pseudococcus sacchari Ckll.) was fairly common on sugarcane at Guyana, April 13-15 and less common at Mayaguez April 21-23 in several large cane variety experimental plots in which we were making detailed Diatraea counts. (M.D.L. and F.S.)

A light infestation of the sugarcane scale (Aspidiotus sacchari Ckll.) at Mayaguez April 21-23 and fairly common at Guyana, April 13-15 in large experimental plots of several varieties of sugarcane in which we were making detailed borer counts. (M.D.L. and F.S.)

Jesus Gomez reported observing a few coffee trees infested with the beetle borer (Apate francisca Fab.) at Guyanilla during an inspection trip there in April.

A light infestation of the green scale (Coccus viridis Green) was reported on leaves and stems of a number of young coffee trees in a variety breeding plot at the Station at Rio Piedras. The Coffea arabica and C. liberica plants seemed to be more infested than the others; among

other species present are: C. janephora, C. guillou, C. robusta, and C. congensis.

A light infestation of Pseudococcus citri Risso was noted on April 18 in a small variety planting at the Station at Rio Piedras; one small tree of Coffea arabica, however, had been nearly killed by the mealybugs.

A hemispherical scale (Saissetia hemispherica Targ.) was reported by Jesus Gomez as abundant at Guyanilla during April and causing considerable sooty mould on the coffee trees.

A survey under the direction of I. L. Torres, Director of Agricultural Extension of the Insular Department of Agriculture, in search of the banana root weevil (Cosmopolites sordidus Germ.) on banana, was made during March and April on 800 farms comprising about 50,000 acres of land in the Ponce, Penuclas, and Guyanilla Districts. These places were previously thought to be uninfested. The infestation in the Ponce District was found to be generally distributed and from 7 to 20 per cent of the plantations were affected; in the other two Districts infestation was found to be just starting and still scattered and light. The wholesale collection of larvae and adults of Strataegus quadrioveatus P. de B. on cocoanut by boys for the Agricultural Extension Division of the Insular Department of Agriculture has been continued during the month and a large quantity of specimens have been gathered and destroyed in the Mayaguez district.

The Agricultural Agent at Humacao reports a 2-acre planting of tobacco completely stripped of leaves by the tobacco hornworm (Protoparce sexta Joh.) during April at Juncos.

The bean lacebug (Corythucha gossypii Fab.) was found to be moderately infesting a large garden patch of pole lima beans at Aguirre, April 4, M.D.L. and A.S. Mills) and on April 30 several good sized string bean plants on the Insular Experiment Station grounds at Rio Piedras were considerably infested.

A. S. Mills reports a moderate infestation of sword bean (Canavalia spp.) pods during the latter part of the month at Florida by the cowpea pod and stalk borer (Fundella cisticollis Dyar ).

All stages of a plant-bug (Phthia picta Drury) were found abundantly on a single tomato plant at the Insular Demonstration Farm at Mayaguez on April 22, but apparently doing but little injury.

Dr. Bregger reports that about 10 per cent of the sweet corn ears are infested by the corn ear worm (Heliothis obsoleta Fab. on a small test plot at the Insular Station.



The cabbage looper (Plutella maculipennis Curtis) was severely infesting a fairly large garden patch of cabbage at Aguirre on April 4. (M.D.L. and A.S.M.)

A leaf miner, presumably Agromyza inaequalis Moll., was fairly common on cabbage plants at the station.

The Agricultural Agent at Carolina, Ismael Flores, has reported many plantings of sweet potato as badly infested by the sweet potato weevil (Cylas formicarius Fab.) during the month in his section, with a considerable resulting loss in the crop.

About 10 per cent of the leaves of sweet potato in a small garden patch at Petillas on April 3 were showing mines by the sweet potato leaf-miner (Agromyza inomeae Frost) (M.D.L. and A.S.M.)

It was reported the last of April that during February and March, owing to a bad infestation of this common pod borer (Utetheisa ornatrix L.) a large grower at Palo Seco was able to obtain only about 7 tons of seed from 60 acres of Crotalaria.

A leaf tier (Dichomeris piperatus Wlsm.) has been scarce on alfalfa on experimental plots at the sub-station at Isabela as compared with a bad infestation in the spring of 1930, according to a report from L. A. Serrano, Director of the sub-station.

Several large West Indian laurel trees (Ficus nitida) in the Plaza at Caguas are badly infested by Gynaikothrips uzeli Zimm. (G.N. Wolcott, M.D.L. and A.S.M.) and was common on the same host on several trees in the Plaza at Guyana April 14.

Icerya monserratensis Riley & Howard was so abundant on several trees (Ficus nitida) in the Plaza at Caguas on April 4 that many of the lower twigs were almost defoliated. (G.N.W., M.D.L., and A.S.M.)

In October 1930, M. F. Sein, Jr., found a number of fruits infested by the pickle worm (Diaphania nitidalis Cramer) at Lares. This was apparently the first record of a definite locality or food plant for this insect in Porto Rico. He states that from October, 1930, to April, 1931, he has found from 5 to 10 per cent of the fruits infested in the market in Rio Piedras. On April 27 two fruits in a small planting at the Insular Experiment Station at Rio Piedras were found infested, one of them badly so.

The cotton leaf worm (Alabama argillacea Hbn.) was reported by E. P. Rorke from one cotton plantation at Yauco during March but he stated that he knows of no infestation in the South Coast during April. On April 18 the Agricultural Agent at Carolina, Mr. Flores, reported an infestation during the first week in April on 12 acres in the Barrio Cacao and another on 8 acres in the Barrio Canocanillas but these were promptly handled by spraying. Mr. Rorke also reported a light infestation April 20-25



at Camney in one planting.

Mr. E. F. Rorke reports that the pink bollworm (Pectinophora gossypiella Saund.) has become progressively worse on the South Coast during the month and estimates that at least 15 per cent reduction of the crop on the approximately 10,000 acres of cotton there will result from its attacks. No cotton will be bought from the growers after May 15, owing to this insect and drought, whereas otherwise picking could have continued until well into June. During the week of the 20th ten meetings were held in as many towns in the South Coast to explain control measures and the "dead season" for cotton to start May 15 on the South Coast (this also includes the Carolina section on the North Coast). On April 3, G.N.W., M.D.L. and A.S.M. examined wild tree cotton on Road 3, between Guyama, Arroyo, and Patrillas; infested bolls were found each time but the infestation became more pronounced as we went Eastward from Guyama.

On April 20 Dr. Mel T. Cook of the Insular Station found a light infestation in one field at Carolina and on the 30th several infested bolls were observed out of many on a half dozen large Sea Island plants growing on the Station grounds at Rio Piedras. One larva and one moth of the common scavenger Pyroderces rileyi Wlsm. in cotton bolls was found at the station.

Only a few leaves out of a number of plants of wild tree cotton at several stops made between Guyama and Patrillas were found to contain the mines by a cotton leaf miner (Nepticula gossypii Forbes).

E. F. Rorke reports the cotton stainer (Dysdercus andreae L.) generally distributed and doing considerable injury (more than during March) throughout the whole south Coast cotton growing section. Dr. Ismael Flores Lugo reports stainers bad on April 18 in a 2-acre field in the Unidad Rural in the Barrio Carruzo and abundant on Mega trees in Barrio Cedro.

### CUBA

Notes on observations during May, 1931.

By L. Dean Christensen.

Recently, in the community gardens at Central Baragua, Provincia De Camaguey, there has been considerable damage to red peas by Lachnopus hispidus Gyll. The adult of this curculionid feeds on the young plants, eating large evenly cut pieces from the edges of the newly formed leaves. The beetles averaged about 20 to the hill and many of the single leaved shoots had been completely defoliated. Black-eyed peas were attacked slightly by the same pest.

# INSECT CONDITIONS IN PORTO RICO DURING APRIL, 1931.

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico.

About 10 per cent, by actual count, of the canes were infested on several varieties in experimental plots by the sugarcane moth borer (Diatraea saccharalis Fab.) at the Central Ignaldad near Mayaguez on April 21-23. (M.D.L. and F. Sein, Jr.)

Moths of the sugarcane root-caterpillar (Perforadix sacchari Sein) were common April 21-23 at Mayaguez where they were observed diving, after short flights, into the cut trash on the ground, the cane having been only just cut. (M.D.L. and F.S.)

The West Indian cane weevil (Metamasius hemipterus L.) is fairly common April 13-15 at Guyama and there is a very light infestation at Mayaguez April 21-23 in large cane variety experimental plots in which we are making detailed Diatraea counts. This insect is reported as abundant and generally distributed in banana plants on about 100 farms in which Mr. Jesus Gomez, Agricultural Agent of Huracao, was surveying during the month at Guyanilla for Cosmopolites sordidus Germ. (M.D.L. and F.S.)

The pink leaf sheath bug (Lasiochilus divisus Champion) was fairly common in all stages in a large experimental plot comprising 5 varieties of sugarcane at the Central Ignaldad at Mayaguez April 21-23. (M.D.L. and F.S.)

The yellow cane aphid (Sipha flava Forbes) was reported on April 24 by the manager of a large central at Cabo Rojo to be much less serious than last month on sugarcane owing to rains during April but he stated that there was still some infestation.

The cane mealybug (Pseudococcus sacchari Ckll.) was fairly common on sugarcane at Guyama, April 13-15 and less common at Mayaguez April 21-23 in several large cane variety experimental plots in which we were making detailed Diatraea counts. (M.D.L. and F.S.)

A light infestation of the sugarcane scale (Aspidiotus sacchari Ckll.) at Mayaguez April 21-23 and fairly common at Guyama, April 13-15 in large experimental plots of several varieties of sugarcane in which we were making detailed borer counts. (M.D.L. and F.S.)

Jesus Gomez reported observing a few coffee trees infested with the beetle borer (Apate francisca Fab.) at Guyanilla during an inspection trip there in April.

A light infestation of the green scale (Coccus viridis Green) was reported on leaves and stems of a number of young coffee trees in a variety breeding plot at the Station at Rio Piedras. The Coffea arabica and C. liberica plants seemed to be more infested than the others; among



at Carnney in one planting.

Mr. E. F. Rorke reports that the pink boll-worm (Pectinophora gossypiella Saund.) has become progressively worse on the South Coast during the month and estimates that at least 15 per cent reduction of the crop on the approximately 10,000 acres of cotton there will result from its attacks. No cotton will be bought from the growers after May 15, owing to this insect and drought; whereas otherwise picking could have continued until well into June. During the week of the 20th ten meetings were held in as many towns in the South Coast to explain control measures and the "dead season" for cotton to start May 15 on the South Coast (this also includes the Carolina section on the North Coast). On April 3, G.N.W., M.D.L. and A.S.M. examined wild tree cotton on Road 3, between Guyana, Arroyo, and Patrillas; infested bolls were found each time but the infestation became more pronounced as we went Eastward from Guyana.

On April 20 Dr. Mel T. Cook of the Insular Station found a light infestation in one field at Carolina and on the 30th several infested bolls were observed out of many on a half dozen large Sea Island plants growing on the Station grounds at Rio Piedras. One larva and one moth of the common scavenger Pyroderes rileyi Wlsm. in cotton bolls was found at the station.

Only a few leaves out of a number of plants of wild tree cotton at several stops made between Guyana and Patrillas were found to contain the mines by a cotton leaf miner (Nepticula gossypii Forbes).

E. F. Rorke reports the cotton stainer (Dysdercus andreae L.) generally distributed and doing considerable injury (more than during March) throughout the whole south Coast cotton growing section. Dr. Israel Flores Lugo reports stainers bad on April 18 in a 2-acre field in the Unida Rural in the Barrio Carruzo and abundant on Moga trees in Barrio Cedro.

## CUBA

Notes on observations during May, 1931.

By I. Dean Christensen.

Recently, in the community gardens at Central Baragua, Provincia De Caraguay, there has been considerable damage to red peas by Lachnopus hispidus Gyll. The adult of this curculionid feeds on the young plants, eating large evenly cut pieces from the edges of the newly formed leaves. The beetles averaged about 20 to the hill and many of the single leaved shoots had been completely defoliated. Black-eyed peas were attacked slightly by the same pest.



other species present are: C. danenhora, C. quillou, C. robusta, and C. consensis.

A light infestation of Pseudococcus citri Rizzo was noted on April 18 in a small variety planting at the Station at Rio Piedras; one small tree of Coffea arabica, however, had been nearly killed by the mealybugs.

A hemispherical scale (Spissettia hemispherica Targ.) was reported by Jesus Gomez as abundant at Guyanilla during April and causing considerable sooty mould on the coffee trees.

A survey under the direction of I. L. Torres, Director of Agricultural Extension of the Insular Department of Agriculture, in search of the banana root weevil (Cosmopolites sordidus Germ.) on banana, was made during March and April on 800 farms comprising about 50,000 acres of land in the Ponce, Penuelas, and Guyanilla Districts. These places were previously thought to be uninfested. The infestation in the Ponce District was found to be generally distributed and from 7 to 20 per cent of the plantations were affected; in the other two Districts infestation was found to be just starting and still scattered and light. The wholesale collection of larvae and adults of Strategus quadrifoveatus P. deB. on coconut by boys for the Agricultural Extension Division of the Insular Department of Agriculture has been continued during the month and a large quantity of specimens have been gathered and destroyed in the Mayaguez district.

The Agricultural Agent at Huracao reports a 2-acre planting of tobacco completely stripped of leaves by the tobacco hornworm (Protoparce sexta Joh.) during April at Juncos.

The bean lacebug (Corythucha gossypii Fab.) was found to be moderately infesting a large garden patch of pole lima beans at Aguirre, April 4, M.D.L. and A.S. Mills) and on April 30 several good sized string bean plants on the Insular Experiment Station grounds at Rio Piedras were considerably infested.

A. S. Mills reports a moderate infestation of sword bean (Canavalia spp.) pods during the latter part of the month at Florida by the cowpea pod and stalk borer (Fundella cistipennis Dyar ).

All stages of a plant bug (Phthia picta Drury) were found abundantly on a single tomato plant at the Insular Demonstration Farm at Mayaguez on April 22, but apparently doing but little injury.

Dr. Bregger reports that about 10 per cent of the sweet corn ears are infested by the corn ear worm (Heliothis obsoleta Fab. on a small test plot at the Insular Station.

The cabbage looper (Plutella maculipennis Curtis) was severely infesting a fairly large garden patch of cabbages at Aguirre on April 4. (M.D.L. and A.S.M.)

A leaf miner, presumably Agropyza inaequalis Mall., was fairly common on cabbage plants at the station.

The Agricultural Agent at Carolina, Israel Flores, has reported many plantings of sweet potato as badly infested by the sweet potato weevil (Cylas formicarius Fab.) during the month in his section, with a considerable resulting loss in the crop.

About 10 per cent of the leaves of sweet potato in a small garden patch at Patillas on April 3 were showing mines by the sweet potato leaf-miner (Agropyza iboreae Frost) (M.D.L. and A.S.M.)

It was reported the last of April that during February and March, owing to a bad infestation of this common pod borer (Utetheisa ornatrix L. a large grower at Palo Seco was able to obtain only about 7 tons of seed from 60 acres of Crotalaria.

A leaf tier (Dichomeris pingeratus Wlsm.) has been scarce on alfalfa on experimental plots at the sub-station at Isabela as compared with a bad infestation in the spring of 1930, according to a report from L. A. Serrano, Director of the sub-station.

Several large West Indian laurel trees (Ficus nitida) in the Plaza at Caguas are badly infested by Gynaikothrips uzeli Zimm. (G.N. Wolcott, M.D.L. and A.S.M.) and was common on the same host on several trees in the Plaza at Guyama April 14.

Icerya monserratensis Riley & Howard was so abundant on several trees (Ficus nitida) in the Plaza at Caguas on April 4 that many of the lower twigs were almost defoliated. (G.N.W., M.D.L., and A.S.M.)

In October 1930, M. F. Sein, Jr., found a number of fruits infested by the pickle worm (Dianthia nitidalis Cramer) at Lares. This was apparently the first record of a definite locality or food plant for this insect in Porto Rico. He states that from October, 1930, to April, 1931, he has found from 5 to 10 per cent of the fruits infested in the market in Rio Piedras. On April 27 two fruits in a small planting at the Insular Experiment Station at Rio Piedras were found infested, one of them badly so.

The cotton leaf worm (Alabama argillacea Hbn.) was reported by E. P. Rorke from one cotton plantation at Yauco during March but he stated that he knows of no infestation in the South Coast during April. On April 18 the Agricultural Agent at Carolina, Mr. Flores, reported an infestation during the first week in April on 12 acres in the Barrio Cacao and another on 8 acres in the Barrio Canocanillas but these were promptly handled by spraying. Mr. Rorke also reported a light infestation April 20-22

THE INSECT PEST SURVEY  
BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

July 1, 1931.

Number 5

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





# INSECT PEST SURVEY BULLETIN

Vol. 11

July 1, 1931

No. 5

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JUNE, 1931

The severe armyworm outbreak reported from Texas as far northward as Virginia in the last number of the Survey Bulletin became serious during the month of June in the East Central States westward to Iowa. In the East Central States this insect is doing considerable damage to small grain and corn.

The unusual cutworm prevalence that developed during May progressed through the early part of June, reports of serious damage to a great variety of crops having been received from Connecticut southward to Virginia and westward to Colorado and Utah. The most serious phase of this cutworm development is an outbreak of the variegated cutworm which extends from southern Nebraska across Kansas and into Oklahoma and Arkansas.

During June grasshoppers developed to such an extent as to require control measures in northwestern Minnesota, throughout the two Dakotas, southward through Nebraska to north central Texas, and westward into the Great Basin region. There is a local outbreak in Klamath and Lake Counties, Oregon, where 25,000 pounds of poisoned bran mash are being distributed daily for their control.

Wireworms have been reported as doing rather severe damage to corn in Vermont and Pennsylvania and to a variety of crops from New York southward to Maryland and westward to Iowa and Nebraska. The wireworm Heteroderes laurentii Guer. more seriously damaged the commercial Irish potato crop of Alabama than it has in any year since its discovery in that State.

The Hessian fly is apparently decidedly on the increase in the East Central States, with scattered serious infestations in Nebraska and Kansas. Rather heavy infestations of spring wheat by this insect are reported from the Willamette Valley of Oregon.

A rather unusual infestation of wheat by the tenebrionid Blapstinus gregalis Casey in the region north of Great Falls in Montana occurred during the month. In the infested fields as many as 100 beetles to the square yard have been observed.

During the last week in June recently hatched chinch bugs were observed in the heavily infested area extending from western Ohio to southeastern Kansas. The outbreak this year seems to be more severe than has been recorded for several years.

The corn ear worm became seriously destructive in the Gulf region and the lower Mississippi Valley during the early part of the month and was first observed in Nebraska about June 10 and in Maryland June 15.

More damage has been occasioned to corn by sod webworms in the East Central States than has occurred in a number of years, very serious damage being reported from Ohio westward to Iowa.

The velvetbean caterpillar appeared in the Everglades of Florida on June 10. This is about two weeks earlier than in 1930.

During the early part of June the rosy apple aphid developed to serious proportions in southern New England and in the Middle Atlantic and East Central States extending southward to Arkansas. Very heavy infestations by this insect are also reported from the Pacific Northwest.

First side-worm injury by the codling moth was reported from Massachusetts about June 16. By the middle of the month eggs were hatching in the Hudson River Valley of New York and by the third week of the month they were hatching in numbers in western New York. Side-worm injury had started in southern New Jersey by June 9. From the Hudson River Valley southward to Georgia the codling moth seems to be unusually abundant. Very heavy infestations are also reported from the greater part of the East Central States westward to Nebraska and Kansas. In the Pacific Northwest the codling moth situation is more serious than it has been for several years.

Apple leafhoppers are doing considerable damage in the Northeastern and Middle Atlantic States southward to North Carolina.

The oriental fruit moth situation on the whole seems to be much less serious than at this time last year.

Although the light infestation of the plum curculio reported in the last number of the Survey Bulletin prevailed over the South Atlantic States, infestation by this insect developed to rather serious proportions in the Hudson River Valley and Connecticut. The first beetle of this year's generation to be observed in a pupal cell was seen at Fort Valley, Ga., on June 1. The first transformation reported last year was on May 23, which itself was considered late.

Considerable damage was done in southern Georgia to pecans by the pecan leaf case bearer, while in Florida the nut case bearer destroyed over 75 per cent of the crop about Jacksonville. In the vicinity of Albany, Ga., the nut case bearer infestation is extremely light.

The hickory shuck worm on pecan is occasioning considerable alarm in parts of Georgia and Mississippi.

The Mexican fruit worm was found infesting locally grown fruit at Matamoros, Mexico, and in a grove near Mission, Texas.



The seed corn maggot was rather destructive in New York and the East Central States southward to Kentucky and westward to Nebraska.

The cabbage maggot is occurring in outbreak numbers in Connecticut, New York, and New Jersey, with serious damage also reported from Indiana, Kentucky, and Wisconsin. In Connecticut one grower estimated his loss at between 2,000 and 3,000 plants, while plants in unscreened beds in New York were damaged from 15 to 60 per cent.

The Colorado potato beetle continued to be unusually abundant in the Middle Atlantic States westward to Illinois, and an unusual outbreak of this insect was reported from northwestern Iowa.

The potato aphid is much more abundant on potatoes and tomatoes on the eastern shore of Maryland and Virginia than usual. This insect is also reported as being very abundant in Indiana and Ohio.

The Mexican bean beetle is causing serious damage in Hartford County, Conn., and became so numerous in parts of New Jersey that the supply of insecticides for their control was exhausted.

The asparagus beetle was very troublesome from Connecticut westward to Iowa, complete devastation taking place at many points. This insect is also becoming a serious pest in Colorado and California.

Throughout practically the entire country, from New England to Florida and westward to Iowa and Nebraska, the striped cucumber beetle is being reported as unusually destructive.

From central Ohio westward to Wisconsin the pea aphid is so abundant that the pea crop is seriously threatened.

The potato tuber worm was found attacking tobacco at several places in Kentucky during the third week in June. This is said to be the first record of the occurrence of this insect in that State.

A very heavy emergence of Brood V of the periodical cicada is reported from the upper end of Long Island. The occurrence of Brood V in New York State was first definitely established by W. T. Davis in 1914, although there are a few old records of this brood's appearing there in 1897.

Canker worms have defoliated large areas of forest lands in the Red River valley of North Dakota and are much more numerous than usual in parts of Minnesota, Iowa, Nebraska, and Kansas.

The elm leaf beetle is prevalent in southern New England and is appearing in large numbers in Rhode Island.

We wish to call the attention of our readers to a mistake in pagination in the last number of the Survey Bulletin. Page 237 should be 236; page 238 should be 237, and page 236 should be 238.

## OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR JUNE, 1931.

Damage by the pale western cutworm, which was present in outbreak form over much of Alberta and Saskatchewan, is drawing to a close. In most of the infested areas the majority of the cutworms were mature, or nearly so, towards the end of June, and reseedling could be carried on with little fear of loss. By the time the crops have been reseeded the cutworm menace will be over for this season, and with sufficient moisture there will be little or no delay in the growth of the crop. The red-backed cutworm is widespread in the northern and central areas of Manitoba, damaging grain crops, and local reports have been received of the prevalence of this species in Alberta. Cutworms of various species are also abundant and injurious to field and garden crops in sections of eastern Canada, and in parts of British Columbia.

Grasshoppers are threatening destruction to alfalfa and other crops in the Fraser Valley, British Columbia, between Lytton and Lillooet. Local outbreaks have developed in the western half of south-central Saskatchewan, and localized damage to grass and grain crops is reported from Manitoba. The moderate grasshopper outbreak of 1930 continues in southern Quebec.

Wireworms are proving injurious to a serious extent on a variety of crops throughout southwestern Ontario. In Saskatchewan it is expected that damage by these insects will be the heaviest on record.

Sod webworm larvae are proving more abundant and destructive in sections of southern Ontario, where they are attacking timothy and June grass sod, than has previously been recorded.

An exceptionally heavy flight of June beetles developed over an area of more than 4,000 square miles in southern Quebec. The flight reached its maximum towards the end of May. The beetles caused much defoliation of deciduous trees and shrubs.

Adults of the Colorado potato beetle appeared in greater numbers in Manitoba than had been anticipated, in view of the lack of snow during the past winter. Reports indicate that this species is unusually abundant in southwestern Ontario, and is likely to be severe in southern Quebec.

Large flights of adults of the beet webworm have occurred in southern Saskatchewan and in sections of Manitoba, indicating a possible outbreak of the larvae of this species on weeds and garden plants.

The San Jose scale has been found on apple trees in the Indian reservation at Night Hawk on the international boundary near Keremeos, British Columbia. The San Jose scale does not seem to flourish in British Columbia.

It is anticipated that the common red spider will prove even more injurious to raspberries in the Niagara peninsula, Ontario, than in 1930. This species is locally severe in southern Manitoba, affecting spruce and small fruits. Spider mites are epidemic on coniferous trees in Saskatchewan.

The European apple sucker has been taken in Yarmouth County, Nova Scotia, west of the previously known limits of its distribution.

Budnots are reported as quite appreciably less numerous in the Annapolis Valley, Nova Scotia, than in 1930.

The larch case bearer is epidemic on larch throughout a large part of eastern Canada. Injury to spruce foliage by the white-marked tussock moth is reported from Nova Scotia. The fall cankerworm is severe on shade trees locally in southern Manitoba, and all elm and basswood trees in southern New Brunswick are reported to be slightly infested by this species.

Mosquitoes have been exceptionally scarce in the Ottawa district, due largely to the absence of river floods and to past and present weather conditions. Reports indicate that these insects are below average in abundance, in certain sections of Ontario and southern Quebec. The mosquito infestation in the Dry Belt area of British Columbia is reported as very slight.



## GENERAL FEEDERS

### CUTWORMS (Noctuidae)

- Connecticut      M. P. Zappe (June 20): Cutworms were causing severe injury to young apple trees, budded last year, at Durham Center. Early in the spring they ate out the buds and later fed on new leaves. They were very abundant on a variety of plants in New Haven County.
- Massachusetts      A. I. Bourne (June 26): In late May and early June there was reported to us a rather severe infestation of cutworms attacking strawberry beds in the Cape section in Barnstable County. Prof. Whitcomb reports that it was probably the darksided cutworm, Euxoa messoria Harr., although this has not been definitely determined. He reported that practically all of the acreage of strawberries in the region around Falmouth showed infestation and in the worst infested fields from one-fourth to one-half the leaf area of the plant had already been eaten by late May. It was not at all difficult to find from 4 to 10 cutworms hidden under the mulch around one plant. He reports a serious outbreak of climbing cutworms in apple orchards in Essex County where the spotted cutworm, Agrotis Zenigrum, was seriously damaging buds and foliage of apple trees about the middle of May.
- New York      N. Y. State Coll. of Agr., Weekly News Letter (June): Cutworms were quite generally severe over western New York, particularly to tomatoes, and in one planting in Chautauqua County 68 per cent of the plants were cut off in three days. (Abstract, J.A.H.)
- New Jersey      N. J. State Coll. of Agr., Weekly News Letter (June 2): Cutworms are abundant and doing considerable damage to newly set tomato plants in Burlington County.
- Pennsylvania      J. N. Knull (June 11): Cutworms have been very abundant in small gardens throughout the Mont Alto State Forest.
- C. A. Thomas (June 19): Cutworms were abundant and destructive during May and June in southern Pennsylvania, eating off cabbage, tomato, bean, and numerous other small plant.
- Maryland      E. N. Cory (June 22): Cutworms are very abundant in Anne Arundel County.
- W. S. Abbott (May 25): One report of very heavy damage to strawberry plants by cutworms has been received from Silver Spring.
- Virginia      G. E. Gould (June 24): Cutworms of several different species have been reported causing damage to different crops in Norfolk.

One species has been common in cucumber fields, cutting off the young plants, while another species has been found feeding in the cabbage heads. Damage to home vegetable and flower gardens is common.

E. W. Mendenhall (June 18): The climbing cutworm (Agrotis unicolor Walk.) is very bad on garden crops in Lake County.

J. J. Davis (June 24): Cutworms were predominating pests. During May they were primarily pests of corn but from May 25 to June 10 (especially the last few days in May and the first few in June) they were primarily garden pests. All kinds of garden crops were attacked, tomato being the most commonly damaged. Other garden crops attacked included melons, potato, and cabbage.

W. P. Flint (June 20): More reports of cutworms have been received than for many years. The principal species have been the clay-backed (Feltia gladiaria Morr.) and listly (Folia renisera Steph.) with a very few black cutworms (Agrotis ypsilon Rott.) now appearing.

W. A. Price (June 25): Cutworms have been very abundant generally over the State, but now are disappearing.

R. Hutson (June 20): Cutworms are very abundant in orchards, and moths are appearing.

C. H. Koonz (June 24): Cutworms are very abundant and have destroyed much corn.

A. G. Ruggles and assistants (June): Cutworms, though very destructive earlier in the month, are generally of minor importance at the present time. (Abstract, J.A.H.)

M. H. Sverck (May 15 - June 15): An aftermath of the plenitude of the army cutworm (Chorisaenotus auxiliaris Grote) in April was the heavy flight of moths of this species, much inquired about and complained of during the first half of June. All parts of the State were more or less involved in these flights, but more especially the western and central parts. (June 8 - 13): During the second week in June, from the 8th to the 13th, there was a sharp outbreak of the variegated cutworm (Iycophotia margaritosa saucia Hbn.) in southern and eastern Nebraska. The outbreak centered in severity in the southern tier of counties from Furnas County east to Gage and Lancaster Counties, and especially in southern Franklin County around Naponee, Franklin, and Riverton. Many fields of alfalfa, sweet clover, and potatoes were involved, and some of them were completely stripped of leaves. There was trouble with this climbing cutworm during the same period in northeastern Nebraska, centering about Dakota County.



D. B. Whelan (May 15 - June 15): During the second week in June a few yellow-striped armyworms (Prodenia ornithogalli Guen.) were found in the sweet clover fields in Lincoln that were being injured by the variegated cutworm.

Iowa —

C. J. Drake (June 27): Several species of cutworms occur in large numbers throughout the State. Considerable damage has been done to corn, alfalfa, clover, garden, and truck crops. In some alfalfa fields the cutworms are extremely abundant, and farmers report that as soon as the hay is cut the worms start feeding on the leaves. In several instances the worms have been so abundant that they have been picked up by the hay loader and mixed with the hay to such an extent that the hay cannot be put into the barn. Several fields of corn have been badly injured or totally destroyed by cutworms.

C. N. Ainslie (June 11): Cutworms of several species are exceedingly numerous around Sioux City. All gardens are suffering and large potato growths are being cut off. A flight of the moths is attracting attention and exciting much comment. When their day hiding places are disturbed they fly in large numbers. (June 15): Damage from cutworms appears to be on the increase around Sioux City as the season advances. Potatoes are being badly injured and, in at least one field, corn a foot high is being cut off below the ground level and is being replanted in some damaged fields. (June 24): These specimens were determined by Dr. Schaus as Chorizagrotis auxiliaris Grote and C. agrotis Grote.

Kansas

H. R. Bryson (June 22): Cutworms are very abundant and general in distribution as far west as Dodge City. The variegated cutworm (Lycophotia margaritosa saucia Hbn.) has been very abundant this spring, being of almost general distribution over the entire State. The greater portion of the injury resulting from the ravages of this pest has been reported from alfalfa fields or fields adjacent to alfalfa fields. The larvae killed or seriously retarded the second crop of alfalfa, causing some fields to appear brown. In many instances the larvae migrated from the alfalfa fields to near-by corn fields, vegetable gardens, or orchards, where they continued their destruction. At Manhattan in the college orchard the moths laid eggs on the vetch plants used as a cover crop. The larvae soon devastated the vetch and migrated to the grapevines, where they began to defoliate the plants and attack the young bunches. The young peach fruit was injured considerably. The writer observed five larvae in one peach during the day. The larvae in the trees continued to feed during the day. The greater part of the injury to truck gardens was done at night. On a recent trip to Hay and Colby, R. H. Painter found variegated cutworms injuring sweet clover but not uncut alfalfa near by. At Colby they had migrated from alfalfa to elm trees and other plants.



homa

C. E. Sanborn (May 28): The variegated cutworm is doing serious damage to alfalfa at Alva, Oklahoma City, Pauls Valley, Muskogee, Tulsa, and Stillwater.

nsas

D. Isely (June 23): There has been an outbreak of unusual severity of the variegated cutworm, during the latter part of May and the early part of June. This outbreak occurred along the Mississippi and Arkansas Rivers, from the northwestern corner of the State to the east central part. Most of the infestations were centered around alfalfa fields from which the worms moved to destroy adjoining crops of corn and cotton.

issippi

State Plant Board, Press Release (June 1): In one case in Washington County 160 acres of spring alfalfa was destroyed by the variegated cutworm.

rado

C. P. Gillette (June 26): The red-backed cutworm (Euxoa ochrogaster Guen.) is very abundant in southwestern Colorado. Chorizagrotis sp. and the pale western cutworm (Parasagrotis orthogonia Morr.) are very abundant in eastern and southern Colorado.

G. F. Knowlton (June 6): Cutworms are seriously damaging many fields of sugar beets in the area west of Springville. Twenty acres in one field had to be replanted because of this damage, and large areas in other fields are bare at the present time. Injury to beets in the Sevier Valley has been reported. Four acres of beets were destroyed west of Provo. (June 10): Cutworms have been causing damage to sugar beets in several fields in Boxelder, Cache, and Utah Counties.

on

L. P. Rockwood (June 1): Moths of A. ypsilon Rott. are somewhat more numerous than in 1930 in bait traps on land over-flooded until early May. No damage is being done.

#### ARMYWORM (Cirphis univincta Haw.)

Virginia

L. M. Peairs (June 23): The armyworm is destructive to corn and garden crops in various places.

inia

H. G. Walker and G. E. Gould (June 24): The armyworm outbreak in eastern Virginia reached maximum proportions in late May and caused severe damage to some fields of oats, rye, wheat, and corn in five counties. Two reports were received of damage about June 8 to fields of rye and corn. Counts made in late May showed that over 88 per cent of the caterpillars were parasitized by tachinid flies. Moths from the May outbreak began to appear about June 15.

C. R. Willey (June 5): Specimens of armyworms were received from Buark, Middlesex County, on June 2, with the following

statement: "Last week just as my wheat was in bloom on some pasture land the worms seemed to start in the same place as they did last fall and in two days had completely destroyed all the blades of wheat as well as the stand of grass, which was about 6 inches high. There are three larger farms a few miles away entirely demolished already." At least 95 per cent of the specimens were infested with parasitic eggs which I take to be tachinid flies.

North Carolina      C. H. Brannon (June 10): Serious damage by armyworms has occurred in Halifax, Iredell, New Hanover, and Currituck Counties.

Ohio                  T. H. Parks (June 24): Armyworms appeared in Franklin County June 20 and in the past four days have been stripping several rye fields of their foliage and are feeding in some wheat fields. They have already begun to migrate to corn and have destroyed about 10 acres of corn in 3 days on a farm 4 miles east of Columbus. The infestation in Franklin County has been reported only in the southern half of the county and usually starts in rye fields. Reports also come from Pickaway, Fairfield, Clinton, and Madison Counties.

Indiana              J. J. Davis (June 3-9): The common armyworm was abundant and destructive to barley, wheat, oats, and corn in southern Indiana. Definite reports show general abundance in Posey, Gibson, Warrick, Harrison, and Monroe Counties.

Illinois              W. P. Flint (June 20): Armyworm outbreaks have occurred throughout the southern part of the State, but are not occurring in the central area. In most cases the outbreaks have been of only moderate intensity. In a few instances very large numbers of worms have been present in the infested fields.

Kentucky            W. A. Price (June 25): The armyworm outbreak covered practically all the State except the eastern mountainous section, attacking corn and bluegrass. Its first appearance was noted at Hopkinsville on May 23; Lexington, June 2, and Maysville, June 6. They began pupating at Lexington in numbers on June 16.

Iowa                  C. J. Drake (June 17): The first armyworms were reported in Iowa yesterday, June 16. The worms were noted in large numbers in a 60-acre field of corn about 20 miles south of Des Moines and at Logan, Iowa. At Logan the worms completely destroyed 6 acres of corn before they were observed. During the latter part of May and the fore part of June armyworm moths were noted in large numbers flying around lights. (June 27): Outbreaks are taking place in Cerro Gordo, Crawford, Logan, and Monona Counties. At Clear Lake the armyworms have totally destroyed a 20-acre field of rye.

C. N. Ainslie (June 18): An outbreak of the armyworm is reported from near Salix, 25 miles south of Sioux City. Corn appears to have suffered the worst from the attack.



ri L. Haseman (June 22): In several counties an outbreak of armyworms appeared. The worms were practically mature before any of the farmers reported them. West central Missouri has many heavily infested clover and alfalfa fields. The worms are practically all of the pale variety this year. A few moths have already appeared (June 22) and practically all of the worms are almost full-fed. No migration occurred, owing to the excessive supply of vegetation where they hatched.

ka M. H. Swenk (May 15 - June 15): The month of May was cool and there were large flights of the moths of the armyworm beginning about May 22. The first report of such an outbreak came from Thayer County on June 16 where the armyworms were damaging a rye field. This is a very early date for armyworm damage in Nebraska. For comparison armyworms of the first brood were reported as doing damage in 1921 on June 20, in 1919 and 1927 on June 22, in 1912 on June 23, and in 1930 on June 28, and still later in other years.

ky A. C. Morgan, J. U. Gilmore, and J. Milan (June 22): The true armyworm was the cause of considerable damage in Christian County, Ky., and also in Montgomery County, Tenn. Grain fields in many instances were completely defoliated and often half the immature heads were cut off.

see D. Isely (June 23): Local injury by Cirphis unipuncta, was associated with the variegated cutworm outbreak in the eastern part of the State.

as St. Plant Bd., Press Release (June 1): In Sunflower County, on one plantation of 200 acres, all oats were badly damaged by a worm which was thought to be the true armyworm of the Northern States. Prof. Harned states that this is the first record of this insect assuming the army habit and causing so much damage in Mississippi. The worms were reported as numerous as one to each square inch. The damage occurred so suddenly that control measures were not used in time to do much good. Parasitic flies were observed attacking the worms in large numbers, and it is believed that no damage will occur from a later generation.

ssippi F. L. Thomas (May 27): The armyworm is still causing severe losses in 18 counties in north central Texas from Dallas County westward to Concho County.

G. F. Knowlton (June 1): Armyworms seriously damaged 3 acres of sugar-beets at Goshen. (June 6): The armyworm is causing damage to sugar-beet fields in the low areas west of Springville, and northeast of Benjamin.



PAINTED LADY (Vanessa cardui L.)

- Indiana J. J. Davis (June 7, 11, 12): The thistle caterpillar, V. cardui, was reported noticeably abundant on Canada thistle at Logansport, June 7, Fowler, June 11, and Anderson, June 12.
- Minnesota A. G. Ruggles and assistants (June): This insect is occurring in rather unusual numbers and destroying Canada thistle over a wide area in southwestern Minnesota. (Abstract, J.A.H.)
- Iowa C. J. Drake (June 27): The thistle butterfly is extremely abundant and occurs in almost every county in the State. Some farmers report large patches of Canadian thistle practically destroyed by the feeding of these caterpillars. The Canadian thistle seems to be more readily attacked than the other species. It has not been reported as doing any damage to cultivated plants.

GRASSHOPPERS (Acrididae)

- Georgia H. S. Adair (June 24): Grasshoppers (Melanoplus femur-rubrum and other species) have been rather abundant in some places around Albany since the middle of May. They have recently been reported injuring peaches in an orchard near Albany and have been observed feeding some on pecan leaves in orchards where they are abundant and the grass and weeds have died because of dry weather leaving the pecan as the only available green food.
- Ohio T. H. Parks (June 23): Grasshoppers are moderately abundant. They are just hatching in pasture fields and will be serious in some localities.
- Kentucky W. A. Price (June 25): Grasshoppers are very abundant on tobacco and alfalfa.
- Minnesota A. G. Ruggles and assistants (June): Grasshoppers are appearing in rather large numbers in the extreme northwestern part of the State and in the counties immediately north and west of Minneapolis and St. Paul. (Abstract, J.A.H.)
- North Dakota J. A. Munro (June 17): According to reports I have received on the grasshopper situation in various parts of the State, I should judge that it is the only insect problem to cause real alarm. I have already had several reports from farmers and county agents in the eastern counties that the young hoppers have already taken garden stuff, some small grains, and alfalfa. Directions have been sent in response, to aid in control. I understand that hoppers are very abundant at Minot, Ward County, and that the county agent there has been directing control measures over a fairly large territory.

th Dakota

H. C. Severin (June 10): Grasshoppers are reported as already severe on small grain in Charles Mix, Brule, Tripp, Lyman, Mellette, Jones, Jackson, Hughes, Stanley, and Haakon Counties. Some trouble also in Perkins, Corson, Clay, and Bon Homme Counties.

souri

L. Haseman (June 22): Waste places, meadows, and pastures are literally alive with grasshopper nymphs recently hatched, mostly apparently of the red-legged species (M. femur-rubrum DeG.). We are certain to have a real outbreak where steps are not taken to destroy the nymphs.

braska

M. H. Swenk (May 15 - June 15): The outstanding entomological development in Nebraska during the period here covered has been the outbreak of grasshoppers, mainly of the two-striped grasshopper (Melanoplus bivittatus Say) in Boyd and surrounding counties in the northeastern part of the State, this being a south-eastward extension into Nebraska of a general outbreak covering more than a thousand square miles in southeastern South Dakota. The first reports of damage in Nebraska came from eastern Boyd County during the third week in May, when quarter-grown grasshoppers were found in abundance attacking alfalfa and other crops, with the pests still hatching in numbers from the pastures, hay meadows, and stubble fields. This outbreak extended during early June to include all of Knox, northern Holt and Rock, all of Boyd, and the eastern part of Keyapala Counties. Three other areas of grasshopper trouble that have developed in Nebraska during the last few days of May and the first half of June include (1) a sandhill infestation in the valley alfalfa and oat fields from Greeley County west to Grant and Arthur Counties and less intensely to Morrill County; (2) a southwestern infestation from Perkins County south to Dundy County and east to Furnas County, in which area there is at this time promise of serious trouble in numerous localities during June and early July; and (3) a similar area centering in Adams and Clay Counties, where the grasshoppers started hatching in abundance in early June and threaten damage. The damage in these three areas does not promise to be as heavy as in the northeastern area. The entire southeastern part of Nebraska, from Clay County east to the Missouri River, and from Nemaha County to Washington County, is having an unusually large hatch of grasshoppers, with some damage already evident in alfalfa fields and in vegetable and flower gardens.

as

H. R. Bryson (June 17): Grasshoppers are reported doing some damage at Courtland.

lahoma

C. F. Stiles (June 22): Various species of grasshoppers are very abundant in southern and southwestern Oklahoma.

as

F. L. Thomas (June 23): Grasshoppers are moderately abundant in west central, northern, and northwestern Texas (57 counties).



- Colorado C. P. Gillette (June 26): Grasshoppers (Melanoplus sp.) are more abundant than they have been for many years.
- Nevada G. G. Schweis (June 26): Grasshoppers are very abundant in western Nevada.
- Arizona C. D. Lebert (June 24): Several species of grasshoppers are very numerous in the Valley. The most prevalent in June are M. differentialis Thos., M. atlanis Riley, M. flavidus Scudd., and Trimerotropis spp. All of the above were noted on the alfalfa and grassy lands of fence rows. Some damage is reported to young citrus seedlings.
- Wyoming C. L. Corkins (June 23): Grasshoppers are very abundant and apparently all of central and northeastern Wyoming is affected. Sheridan, Converse, Natona, Washakie, and Park Counties are reporting damage.
- Utah G. F. Knowlton (June 6): Grasshoppers are still damaging strawberries in parts of Utah County, and are beginning to cause slight injury to beets. At the present time they are threatening damage to alfalfa, grain, and beets in the Elberta and Genola areas. (June 16): Grasshoppers are stripping the leaves from wheat and attacking the heads in the area west of Garland where wheat fields adjoin range land. M. atlanis Riley and Mulocara ellioti Thos. are the most abundant species found and about 2 per cent of these have become adult. A few adults of M. bivittatus Say were also taken. Part of one alfalfa field southwest of Penrose has been stripped of leaves by grasshoppers, M. atlanis being the most abundant form with about 5 per cent of the specimens taken having become adults. Barley in this area was being damaged by M. bivittatus and M. atlanis.
- Oregon Oreg. Agr. Coll., Insect Pest Report (May): C. A. Henderson reports that grasshoppers started hatching in the Klamath district May 1, and the hatching season is now in full swing. Territory involved includes Chewaucan Valley, Sycan Valley, Upper Klamath Marsh, Sprague River, Fort Klamath, head of Williamson Modoc Point, Klamath Agency, and Lower Klamath Lake, and there are a few hoppers in Tule Lake. Klamath and Lake Counties jointly are poisoning over a half million acres, using about 25,000 pounds poisoned bran mash daily.
- L. P. Rockwood (May 31): First-stage larvae of Melanoplus sp., probably femur-rubrum, appeared May 31. It is too early to predict abundance.

#### WIREWORMS (Elateridae)

- Vermont H. L. Bailey (June 23): Wireworms are reported as doing much damage to corn at Chelsea.



- York N. Y. State Coll. of Agr., Weekly News Letter (June): A. W. Rawlins reports that wireworms are working in potato seed pieces in Wyoming County. C. L. Messer, jr., reports that in one field where the stand was uneven, underground stalks were examined and were found to be chewed, probably by wireworms, as the field had been in sod several years and was not fall-plowed in Cayuga County. The wheat wireworm (Agriotes mancus Say) was seriously infesting tomato plantings in western New York. In one field in Genesee County 20 per cent of the plants were killed by this insect. (Abstract, J.A.H.)
- Pennsylvania C. A. Thomas (June 23): Probably because of the cool weather in May wireworms have caused considerable injury in Pennsylvania so far this season. A survey in mid-May to mid-June showed that A. mancus was destructive to corn and oats in Allegheny, Mercer, Crawford, and Erie Counties. The above and Melanotus communis Gyll. and Phaeotus agonus Say are the three principal economic wireworms of this State. The drought of last season was evidently no deterrent to this year's wireworm activity.
- Maryland E. M. Cory (June 26): Wireworms are causing 20 per cent injury to tobacco at Birdsville, Anne Arundel County. A count of two rows totaling 118 plants to the row showed 22 injured; two days afterwards showed 41 injured.
- South Carolina J. N. Tenhet (June 11): First adults of Horistonotus uhleri Horn of this season were taken at Fairfax June 5.
- Ohio T. H. Parks (June 24): Wireworms are causing much damage to corn and garden crops this year, more than for several years.
- Kentucky W. A. Price (June 25): Wireworms are moderately abundant in Calhoun.
- Michigan R. Hutson (June 20): Wireworms are very abundant, mostly on muck.
- Iowa H. E. Jaques (June): Wireworms are moderately abundant in scattered localities throughout the State.
- Nebraska M. H. Swenk (May 15 - June 15): Wireworms were injurious to bottomland corn in Pawnee County during the last week in May.
- Arkansas D. Isely (June 23): Three local infestations of Melanotus were reported from Poinsett County.
- Louisiana W. E. Hinds (June 25): Wireworms are moderately abundant and injuring early potatoes in ~~southern~~ Louisiana.
- Wyoming C. L. Corkins (June 23): Wireworms are moderately abundant. Some damage in the dryland region of the eastern part of the State.

Utah G. F. Knowlton (June 13): Wireworms are moderately abundant. Some damage in the dryland region of the eastern part of the State.

A WIREWORM (Heteroderes laurentii Guer.)

Alabama K. L. Cochran (May 30): There has been injury by this wireworm to Irish potatoes in Baldwin County, Alabama. Injury to the commercial crops this spring is far greater than at any time since this species was discovered in southern Alabama. Many individual crops show injury to more than 50 per cent of the potatoes harvested, and reports, by the government inspectors of the Bureau of Markets, show that damage to all cars inspected by them at some of the shipping platforms for the last week has averaged 25 per cent or more. Nearly every car shipped since May 15 has shown some "worm injury." (June 4): On this date Irish potatoes were found severely damaged by wireworms. The species responsible for the great bulk of the injury in St. Elmo, Mobile County, is H. laurentii.

Florida and Alabama O. T. Deen (June 8): On a short scouting trip during the first week of June the following localities and counties were found as new points of infestation for the introduced wireworm H. laurentii: Bay Minette and Perdido, Baldwin County, Ala.; Freemanville and Canoe, Escambia County, Ala.; McDavid, Gonzalez, Olive, and Gulf Point, Escambia County, Fla.; and Pace and Milton, Santa Rosa County, Fla. This was the first time that adults of this species have been collected in Florida so far as we know.

Mississippi H. Dietrich (June 20): The first adults of H. laurentii this year were taken at light on June 20 in Perry, George, and Green Counties. No injury of larvae has been noticed.

WHITE GRUBS (Phyllophaga spp.)

Ohio E. W. Mendenhall (May 28): May beetles are quite plentiful in Columbus and vicinity and reported as doing damage to plum leaves.

Illinois C. C. Compton (June): Heavy flights of June bugs occurred on June 3 and succeeding nights in Arlington Heights.

J. H. Bigger (June 15): White grubs are very abundant. They destroyed 20 acres in one field in Cass County and are now ready to pupate.

Iowa C. J. Drake (June 27): White grubs, Brood A, are active in feeding and have not as yet started to transform to the pupal stage. During 1930 white grubs destroyed a large number of timothy, bluegrass, corn, and pasture fields in the eastern and southern parts of Iowa. The total damage in the State amounts to

several acres of a 150-acre bluegrass pasture field. In the old bluegrass sod it would be possible to stake off an acre or more of the ground on which it would be impossible to find a living plant of any kind. Population in the totally devastated fields runs from 6 to 13 grubs per square foot.

H. E. Jaques (June): White grubs are very abundant in O'Brien, Union, Wayne, Marion, Black Hawk and Buchanan Counties.

North Dakota

J. A. Munro (June 16): Specimens of white grubs were sent in from Hettinger with the report that they were causing serious injury to gardens there.

Nebraska

M. H. Swenk (May 15 - June 15): Pasture lands, hay meadows, and lawns in northeastern Nebraska, from Thurston County to Holt County and south to Dodge County, were again reported as being injured by white grubs during the last week in May and the first half of June. A study of the grubs indicated that the species chiefly responsible was P. rugosa Melsh. Strawberry beds in the same region were likewise frequently reported as severely injured.

Nebraska

H. R. Bryson (June 6): White grubs are moderately abundant, injuring strawberry beds at Independence and Fort Scott.

Mississippi

R. B. Deen (June 19): May beetles have been very abundant this spring in Lee County. Damage to young pecan leaves has been noticed in several places. Slight injury was noted on pecans in Lincoln County on June 20.

Tah

G. F. Knowlton (June 13): White grubs are doing damage in spots in a few beet fields at Goshen.

#### JAPANESE BEETLE (Popillia japonica Newm.)

Pennsylvania

L. L. Guyton (June 23): The Japanese beetle is moderately abundant in Harrisburg. The first appearance was on June 23.



CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Ohio            T. H. Parks (June 24): The Hessian fly is on the increase after two years of comparative absence. A field of early-sown wheat near Columbus was found today to be seriously infested, with many broken straws. The annual wheat insect survey has not yet commenced but it is apparent that this insect has increased greatly since last year.
- Illinois        J. H. Bigger (June 15): The Hessian Fly is very abundant in western Illinois. Much wheat was going down in some counties, May 21.
- Kentucky       W. A. Price (June 25): The Hessian fly is moderately abundant.
- Iowa            H. E. Jaques (June): The Hessian fly is very abundant in Pottawattamie County.
- Nebraska       M. H. Swenk (June 22): The Hessian fly is moderately abundant in southeastern Nebraska, though there has been no commercial damage as yet.
- Kansas          H. R. Bryson (June 22): Dr. R. H. Painter reports a light infestation on spring wheat at Manhattan extending west to Salina with a heavier infestation near Lindsborg and Lyons. Some fields were found in a recent trip to western Kansas near Hays, Colby, and Dresden, in which 100 per cent of the plants were infested.
- Missouri        L. Haseman (June 22): The spring brood of larvae has caused comparatively little damage to wheat over most of the State, but the fields are generally infested, and with favorable conditions we may have a heavy outbreak this fall.
- Oregon          M. M. Reeher (June 1): Some fields of spring wheat in Washington and Yamhill Counties show rather heavy infestations. Hot dry weather has prevented the emergence of the second generation of flies to date.

ENGLISH GRAIN APHID (Macrosiphum granarium Kby.)

- Indiana        J. J. Davis (June 24): The wheat aphid (M. granarium) was abundant and apparently destructive to wheat heads at Lyons, June 8. They were later reported abundant on wheat heads at Marion, June 20, and Rensselaer, June 22.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Oregon

Oreg. Agr. Coll., Insect Pest Report (May): T. R. Chamberlin reports that approximately 5 per cent of the wheat joint worms were out of the stubble by May 8 in the Molalla district. The parasite Eurytoma parva Phillips had barely begun issuance. Joint worms and E. parva were all out on May 26, adult joint worms being rather scarce and E. parva the more numerous. In late May the parasite Ditropinotus aureoviridis Cwfd. was still in the larval state. The weather seems to have been favorable for a heavy infestation of wheat.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

South Dakota

H. C. Severin (June 10): Plains false wireworms are reported as causing severe damage to small grain and flax in Stanley and Haakon Counties.

Texas

F. L. Thomas (June 23): False wireworms are very abundant at Plainview, also in Floyd, Hale, Lamb, and Swisher Counties.

A TENEBRIONID BEETLE (Blapstinus gregalis Casey)

Montana

G. A. Mail (June 5): I would like to report that the tenebrionid B. gregalis is this spring doing considerable damage to wheat in central and western Montana. In certain sections they are so numerous that under each clod of earth in a field there will be 15 to 20 beetles, and a conservative average in areas where they are doing the most damage would be 100 to the square yard. Both spring and winter wheats are being attacked and the insect is also recorded as attacking sugar beets. The beetle seems to be widespread but the localities where the most severe injury is reported are north of Great Falls.

A LEAFHOPPER (Deltoccephalus configuratus Uh1.)

Nebraska

M. H. Swenk (May 15 - June 15): A few wheat fields in Scotts Bluff County were so heavily infested with the leafhopper D. configuratus during the first week in June that the plants were killed out to a considerable extent.

SAY'S PLANT BUG (Chlorochroa sayi Stal)

Utah

G. F. Knowlton (June 22): A serious outbreak of Say's plant bug is occurring on Bountiful Bench. The adult bugs are extremely abundant, and attacking the heads of wheat, one to four bugs being present on nearly every head in the fields examined.

APPLE GRAIN APHID (Rhopalosiphum prunifoliae Fitch)

Michigan

R. H. Pettit (June 26): An epidemic is raging in the grain fields of Michigan. Reports are being received daily that the heads of wheat are packed full of lice. An examination of all specimens sent in thus far indicates the presence of the northern grain aphid.

CORN

CHINCH BUG (Blissus leucopterus Say)

Ohio

T. H. Parks (June 20): Young bugs are now appearing on wheat and foxtail grass in western Ohio. Examinations of wheat and barley fields indicate that there will be many of these bugs in July, and county agents are preparing to assist farmers to protect their corn.

Illinois

W. P. Flint (June 20): The moderately heavy rains occurring during the first part of June were not sufficiently frequent to cause any great reduction in the infestation. Young bugs are now hatching in very large numbers and the infestation will apparently be heavy enough to cause slight to severe damage over the southcentral part of the State from Fulton and Champaign Counties southward to Randolph and Perry Counties. The insect is numerous enough to cause heavy losses in Christian, Montgomery, Bond, Clinton, and Washington Counties.

Missouri

L. Haseman (June 22): Chinch bugs are more abundant through central Missouri from the Kansas line to the Illinois line than they have been in many years. Unusually favorable weather for the development of wheat, coupled with the late migration of the bugs, has apparently prevented severe damage to wheat. On June 22, while the adults are still mating and ovipositing, early hatched nymphs are fairly covering the base of corn, oats, and wheat plants, where the fields are badly infested. Many cornfields are infested with the old bugs owing to the late flight and by the first of July we are expecting the migration of the young bugs from wheat to corn and our farmers are prepared to fight them with barriers.

Kansas

H. R. Bryson (June 22): Chinch bugs are very abundant. Correspondence indicates that this insect is a menace in southeastern Kansas.

Arkansas

D. Isely (June 23): Local injury by chinch bugs to corn has been reported from a number of counties in the eastern part of the State.



Mississippi

St. Pl. Bd., Press Release (June 8): Several complaints of chinch bugs have been received from various sections of Mississippi. They are probably more abundant this season than usual, according to Prof. R. W. Harned, on account of the prolonged drought of last summer which was very favorable for them. They cause the greatest damage in this State to corn and oats, generally feeding in large numbers around the roots, inside the leaf blades, and on other parts of the plants. Serious injury to corn usually occurs when this crop is adjacent to oats.

WHITE-LINED SPHINX (Colerio lineata Fab.)

Iowa

C. M. Ainslie (June 8): A complaint that corn on low land was being eaten by these worms was investigated and it was found that numerous larvae had wandered away from dock (Rumex sp.) and that corn had been injured but not seriously. The larvae were of all sizes and appeared to relish the corn diet, a most unusual food for the species.

Colorado

C. P. Gillette (June 26): This insect is very abundant, mostly on weeds at Greeley and Collins area.

CORN EAR WORM (Heliothis obsoleta Fab.)

Maryland

E. N. Cory (June 22): Corn ear worm moths were observed about June 15 in small numbers.

Nebraska

D. B. Whelan (May 15 - June 15): The first generation began hatching about June 10. Adults, eggs, and newly-hatched larvae were found on corn plants on June 15 at Lincoln.

Alabama

K. L. Cockerham (June 5): The corn ear worm is beginning to show up as a serious pest on early corn at Foley. A report on one-half carload for market showed approximately 85 per cent injury.

Mississippi

R. W. Harned (June 19): Correspondents at Glendora, Tallahatchie County, and Brooksville, Noxubee County, sent to this office on June 12 and 13 specimens with the information that these insects were abundant on young corn and were causing considerable damage. This insect was also reported as causing considerable injury to the tomato crop at Long Beach, on June 12.

Louisiana

W. E. Hinds (June 23): The second generation of the corn ear worm is moderately abundant in general. Parasitism by Trichogramma minutum Riley is developing in the eggs more numerously, and earlier in the season than is the case with eggs of Diatraea saccharalis Fab.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

North Carolina C. H. Brannon (June 26): The larger corn-stalk borer is causing widespread damage to corn over the State.

Florida J. R. Watson (June 22): The larger corn stalk borer is doing considerable damage to corn in fields above Monticello where rotation of crops is not practiced. The damage has been aggravated by dry weather (F.W.Walker).

CORN BILLBUGS (Sphenophorus spp.)

Michigan R. Hutson (June 15): On June 15 I saw an infestation by one of the billbugs at Alicia, where these pests were taking about one-third of a crop of 80 acres of corn.

South Dakota H. C. Severin (June 10): Sphenophorus aequalis Gyll. is reported at White Lake attacking corn.

SOD WEBWORMS (Crambus spp.)

Ohio T. H. Parks (June 24): There was more damage to corn during June from Crambus larvae than I have ever seen in one year. The injury was general over the State and lasted until almost the end of the month.

Indiana J. J. Davis (June 24): Webworms (Crambidae) were more often reported attacking corn than any other insect. Reports were received from May 23 to June 12 from Bluffton, Crawfordsville, Decatur, Franklin, Greenfield, Logansport, Matthews, Pittsboro, Portland, and Tipton. Many other reports were received by telephone from Tippecanoe and adjoining counties.

Illinois J. H. Bigger (June 15): A very heavy moth flight of leathery colored sod webworms, Crambus trisectus Walk., was noted continuing from June 2 to June 10 in western Illinois. This flight was observed during night driving.

W. P. Flint (June 20): Sod webworms have been reported throughout central Illinois as causing serious injury. In many cases the injury has occurred in fields which were in oats in 1930 and which had become very grassy by fall. Very heavy flights of adults are taking place at the present time, the species most abundant being C. trisectus.

Iowa C. J. Drake (June 27): Sod webworms (two species) are extremely abundant at Toledo, many corn fields having been injured.

Kentucky W. A. Price (June 25): Sod webworm has caused much damage to corn and tobacco at Nicholasville, Muir, Litchfield, Tolleboro and Woodlawn. The moths are very abundant. They can be gathered by the quart about porch lights at night in Lexington. They clog radiators of machines at night.

CLOVER

GREEN CLOVER WORM (Plathypena scabra Fab.)

Illinois C. C. Compton (June 13): Adults of the green clover worm are much more numerous than usual for the Des Plaines section of Illinois. Thirty to fifty moths have been taken in the moth traps every night for the past ten days.

Iowa C. J. Drake (June 27): The green clover worm is extremely abundant throughout the State and doing considerable damage to alfalfa, clover, and peas. It is causing a considerable amount of annoyance on peas in gardens.

A LUCANID BEETLE (Pseudolucanus dama Fab.)

Michigan R. H. Pettit (June 18): I received samples this morning of Lucanus, probably dama, working in a clover field in Mecosta County. The creatures are apparently swarming in great numbers in the clover field. The county agent at Big Rapids writes me that the farm is literally full of holes, or rather this particular spot on the farm is literally full of holes. They are worse in a spot of clover seeding, where every particle of clover vegetation was eaten into the ground, and where they had worked the ground was as bare as a floor as far as clover was concerned. This is quoting County Agent E. E. Thwing. He says they come back to the field every night in large numbers.

CLOVER LEAF WEEVIL (Hypera punctata Fab.)

Oklahoma C. E. Sanborn (May 28): The clover leaf weevil is serious in alfalfa at Guthrie, Stillwater, and doubtless other places.

ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Nevada G. G. Schweis (June 26): The alfalfa weevil is very abundant in western Nevada, causing serious damage to first-crop alfalfa.

Utah G. F. Knowlton (June 21): The alfalfa weevil is moderately to very abundant in Uintah Basin and some other parts of northern Utah.

Oregon Oreg. Agr. Coll., Insect Pest Report (May): The alfalfa weevil is moderately abundant in Jackson County and scarce on banks of the Snake River in Malheur County.



A CURCULIONID (Tanymecus confertus Gyll.)

Nebraska

M. H. Swenk (May 15 - June 15): During the third week in May a field of alfalfa in Keith County, seeded the preceding August, was found to show many bare spots in which the alfalfa and the weed growth had both been eaten. An abundance of the beetle T. confertus in this field indicates the possibility that it may have been responsible for the damage.

A PLANT BUG (Adelphocoris lineolatus Goeze)

Iowa

C. J. Drake (June 27): The alfalfa plant bug is extremely abundant in alfalfa fields in Story County and is spreading rapidly in various directions. It seems to be migrating faster northward than in other directions in the State. In some alfalfa fields in Story County it is possible to collect them in great numbers by sweeping the alfalfa. This insect was first found in Iowa by Dr. H. H. Knight on June 18, 1929.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Arizona

C. D. Lebert (June 24): The three-cornered alfalfa hopper is quite abundant in alfalfa fields in the Salt River Valley.

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Florida

J. R. Watson (June 22): The velvetbean caterpillar appeared at Belle Glade in the Everglades on June 10 and is now abundant on velvetbeans, soy beans, snap beans, and peanuts. This is at least two weeks earlier than last year. (R.N.Lobdell)

ZEBRA CATERPILLAR (Memestra picta Harr.)

Nevada

G. G. Schweis (June 26): Memestra ceramica picta Harr. observed damaging alfalfa fields in the vicinity of Fallon.

SUGARCANE

SUGARCANE BEETLE (Eutheola rugiceps Lec.)

Kentucky

W. A. Price (June 25): Rough-headed corn stalk beetles are damaging corn at Donansburg.

Mississippi

R. W. Harned and assistants (June): Injury to young corn by these insects was reported from Cleveland May 20, from Scobey on June 2, and from Byhalia on June 15. Injury to corn and sugarcane was reported from Philadelphia on June 4.

ouisiana

J. W. Ingram and E. K. Bynum (May 29): A survey has been made from Raceland to Lafayette and from Houma to Alexandria. Beetle injury did not run over 1 per cent, except at Franklin and at two sugarcane plantations. Around Franklin the injury was 10 per cent. On a plantation near St. Martinville one field had damage amounting to over 40 per cent, the other fields having about 15 per cent injury. At a plantation near Morgan City one field had about 3 per cent damage.

W. A. Douglas (May 27): Reports have come to the Rice Experiment Station that the sugarcane beetle has been injuring rice to some extent.

#### SUGARCANE BORER (Diatraea saccharalis Fab.)

ouisiana

W. A. Douglas (June 15): Several examinations of cornfields in the vicinity of Crowley were made last week, and heavy infestations were found in all fields except one. The stalks were practically 100 per cent infested, and the damage was severe enough to cause the stalks to die and fall over.

W. E. Hinds (June 23): The sugarcane borer has started on the second generation. The infestation is generally light as yet although some centers of heavy infestation have been found in corn which was planted early and is now in tassel and developing ears. Parasitism by Trichogramma minutum Riley is developing in the eggs of Heliothis obsoleta, especially, and earlier in the season it was found in the eggs of Diatraea saccharalis Fab.

Monthly Letter of the Bureau of Entomology, Number 205, (May): On May 8 H. A. Jaynes of the Bureau of Entomology sent by airplane from Trujillo, Peru, 1,075 adults of Ipoobracon rimac Wolcott, a hymenopterous parasite of the sugarcane moth borer. The shipment arrived at Miami, Fla., on May 11, and was then sent by express to New Orleans, arriving there on May 13. Three hundred and twenty-seven of the wasps were alive and in good condition. The total trip was less than 6 days, whereas by ship and train it would have required about 22 days. The percentage of survival was better by airplane, although the parasites were not kept at low temperatures, as they are when sent in the ordinary way.

#### RICE

##### RICE WATER WEEVIL (Lissorhoptrus simplex Say)

ouisiana

W. A. Douglas (June 26): The rice water weevil situation is ABOUT as usual. The adults have caused some feeding scars on the rice plants, but not enough to be called injurious. Larvae are present in most fields. The farmers are beginning to realize that this weevil is not an injurious pest of rice.

FRUIT INSECTS

APPLE

APHIDS (Aphidae)

New Jersey      N. J. State Coll. of Agr., Weekly News Letter (June): Fruit aphids increased extremely rapidly during the early part of the month in practically all parts of the State. (Abstract, J.A.H.)

APPLE APHID (Aphis pomi DeG.)

New York      N. Y. State Coll. of Agr., Weekly News Letter (June): During the second and third weeks in June green aphids became quite abundant in the Hudson River Valley, but not numerous enough to be considered serious. (Abstract, J.A.H.)

New Jersey      N. J. State Coll. of Agr., Weekly News Letter (June): Green aphids were showing up in numbers by the third week in June in parts of the State. (Abstract, J.A.H.)

ROSY APPLE APHID (Anuraphis roseus Baker)

Connecticut      P. Garman (June 23): An outbreak of moderate proportions, severe in some orchards or portions thereof, is reported from New Haven and Hartford Counties.

New York      N. Y. State Coll. of Agr., Weekly News Letter (June): During the early part of the month rosy apple aphids increased very rapidly in the lower Hudson River Valley. By the 15th of the month the populations were so large that control measures were applied. The outbreak subsided during the third week in June in the western part of the State. They were still in an active condition on June 22 in many orchards in Monroe County and ruined as much as from 40 to 50 per cent of the fruit. (Abstract, J.A.H.)

New Jersey      N. J. State Coll. of Agr., Weekly News Letter (June): Heavy infestations of the rosy apple aphid caused severe damage in southern Jersey during the first week in June. This condition prevailed to nearly the middle of the month. (Abstract, J.A.H.)

Maryland      E. N. Cory (June 22): The rosy aphid is very abundant throughout the State.

West Virginia      L. M. Peairs (June 23): Rosy aphids are moderately abundant at Morgantown.

North Carolina      Z. P. Metcalf (May 30): The rosy apple aphid is very abundant

Ohio      T. H. Parks (June 24): The rosy aphid was quite abundant in late May and early June, but has now been largely controlled by



larvae of syrphus flies. The infestation was greatest in southern Ohio Counties.

J. J. Davis (June 24): The rosy apple aphid was abundant in many localities this spring and caused some damage. At the present time most of the aphids have disappeared.

W. P. Flint (June 20): Rosy apple aphids are moderately abundant in southern Illinois and extremely abundant in western Illinois. Predators, principally aphid lions and syrphid larvae, are now rapidly reducing the numbers of the insect.

L. Hoseman (June 22): The rosy apple aphid has about run its cycle. It has left a trail of great damage in many orchards.

M. H. Swenk (June 20): Rosy aphids are generally moderately abundant, though several orchards have serious infestations.

D. Isely (June 23): Rosy aphids are very abundant, and have caused unusually severe injury in the northwestern part of the State.

Ortho News, Calif. Spray-Chemical Co. (May 13): In some unsprayed orchards rosy and green aphids were so abundant as to be literally massed about the bud clusters.

#### WOOLLY APPLE APHID (Eriosoma lanigerum Haussn.)

E. W. Mendenhall (June 20): The woolly apple aphid is quite abundant on apple trees in the nursery and orchard.

H. R. Bryson (June 22): The woolly apple aphid was reported on June 16 from Baxter Springs and Beeler.

M. A. Yothers (June 15): Many woolly aphid colonies were already well established in Wenatchee in late March and early April and became abundant during late April and May, but at this date (June 15) they have become so scarce that colonies suitable for introduction of the *Aphelinus* parasite can hardly be found. Coccinellids and syrphus fly larvae have apparently been responsible for the early destruction of these aphids.

Oreg. Agr. Coll., Insect Pest Report (May): The woolly apple aphid is very serious on apples in the Willamette Valley.

CODLING MOTH (Carpocapsa pomonella L.)

Massachusetts

A. I. Bourne (June 26): Observations in local orchards and reports from other sections of the State show the first evidence of side-worm injury from codling moth within the last ten days. This is very evidently due to the entrance of late appearing first brood larvae.

New York

N. Y. State Coll. of Agr., Weekly News Letter (June): Very early in the month it was observed in the Hudson River Valley that pupa cases were much more numerous than in recent years. By the 9th of the month approximately 10 per cent of the moths had emerged. By the middle of the month hatching of eggs was well under way in this part of the State and by the third week in the month eggs were hatching in numbers in western New York. (Abstract, J.A.H.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (June): Records from emergence cages indicate that at least 50 per cent of the overwintering generation have emerged as moths in the southern two-thirds of the State. By June 9 side worm injury had started in southern New Jersey. By the second week in the month side worm injury was observed to be much more abundant than usual, a large part of the fruit in Glassboro district being heavily infested. In one orchard in Gloucester County 100 per cent of the fruit was injured by first-brood worms, with a high percentage of the fruit containing as many as 8 "stings." The side worm injury continued throughout the month. (Abstract, J.A.H.)

Delaware

L. A. Stearns (June 22): The peak of the entry of first-brood larvae occurred June 7-14. This brood at its peak is less abundant than at the same time in 1930.

Maryland

E. N. Cory (June 22): The codling moth is very abundant.

Virginia

W. J. Schoene (June 23): The codling moth is very abundant at Winchester and heavy injury is expected. Dr. W. S. Hough reports that the insect is expected to cause heavy damage in the Winchester section. Eggs are being deposited in large numbers.

North Carolina

C. H. Brannon (June 13): Codling moth damage is very light in the mountains.

Georgia

C. H. Alden (June 22): The codling moth is very abundant at Cornelia. Weather conditions are ideal for multiplication. There was a heavy carry over.

Ohio

T. H. Parke (June 24): Hatching of the first brood commenced the first week of June in Lawrence County. Some worms had left the apples and were going under bands June 20. The brood is quite heavy in most orchards of southern Ohio and two cover sprays were advised for the first brood of worms during June. The situation is not alarming in other parts of the State.



iana J. J. Davis (June 24): The codling moth infestations are the most threatening for many years. At Bedford the first pupa was found by Mr. Marshall June 18. At Lafayette the first moths emerged June 2.

inois W. P. Flint (June 20): Emergence of adults from pupae of the overwintering larvae has nearly ceased in the southern and central parts of the State. There was a very heavy hatch of worms the first part of June and a heavier infestation than usual throughout southern and central Illinois. In many well sprayed orchards it is now very easy to find wormy fruit. If the season continues warm it will be one of the worst codling moth years we have ever experienced. First larvae were taken under bands in southern Illinois June 17; in central Illinois, June 18.

J. H. Bigger (June 15): The codling moth is very abundant in Calhoun County. Still emerging from hibernation June 12.

tucky W. A. Price (June 25): Codling moth is very abundant in western Kentucky.

nesota A. G. Ruggles and assistants (June): The codling moth is reported as very abundant from a large number of localities from the southeastern part of the State. (Abstract, J.A.H.)

aska M. H. Swenk (May 15 to June 15): This spring the first overwintered larva of the codling moth pupated on April 14. This was one day earlier than the first pupation in 1930, 12 days earlier than the first pupation in 1929, and 26 days earlier than the first pupation in 1928. This early pupation would probably have led to an early emergence of moths of the spring brood if it had not been for the low temperatures prevailing during May. As it developed, the first spring-brood moth emerged this spring on May 22, 14 days later than the emergence of the first moth in 1930, 3 days later than in 1929, but one day earlier than in 1928. Pupation of the overwintered larvae steadily increased from April 14 on, and on June 15 about 85 per cent of these larvae had pupated. Emergence of the moths increased from May 22 on, and on June 15 nearly 70 per cent of the moths had emerged. Egg-laying began on May 26. On May 29, 82 eggs; by June 1, 270; by June 4, 426; and by June 15, over 1,800 had been laid by 193 moths. On June 14, 214 eggs were laid, this probably representing the crest of egg-laying. First "red-ring" stage eggs occurred on May 29, first "black-spot" eggs on June 1, and the first larvae hatched on June 2; by June 4, 16 had hatched and on June 15 they were hatching in very large numbers.

sas P. M. Gilmer (June 27): The first brood is just beyond the peak of entrance at Wichita. Infestation is heavier than any time in the last six years at this date. Some poorly sprayed orchards already show 60 to 70 per cent of the fruit infested. With normal conditions for the rest of the season the third brood should be by far the heaviest in the history of the valley.



Missouri

L. Haseman (June 22): Practically all of the first-brood moths are out though in some cages we are still getting a few moths each morning. Our bait pans are catching very few at this date. Earliest worms to enter the fruit are now nearly half-grown and even in well-sprayed orchards we are finding many first-brood worms.

R. M. Jones (June 20): Most of the spring-brood moths have emerged, approximately 95 per cent. In general, quite satisfactory control was obtained against the first brood of worms by orchardists in this section.

Arizona

C. D. Lobert (June 24): The codling moth is numerous on pear and crab-apple trees at Tempe. Many larvae and pupae were taken on the bark of the trees.

Utah

G. F. Knowlton (June 21): Larvae are appearing in moderate abundance in northern Utah.

Washington

E. J. Newcomer (June 22): Owing to almost continuous warm weather from May 20 to June 10, the spring brood developed rapidly, and apparently moths from overwintering larvae had practically all emerged by the latter date. This is the earliest finish of the spring brood in the last six years. Conditions for oviposition have been unusually favorable. An early and abundant second brood is forecast. (Yakima County.)

Wenatchee "World" (June 9): There are said to be more worms actually at work in the orchards in the Pacific Northwest today than ever before at this time of the year. Estimates as high as 25 per cent worm loss are being made by marketing agencies in connection with distribution of boxes.

Oregon

Oreg. Agr. Coll., Insect Pest Report (May): B. G. Thompson reports egg laying peak of first generation reached about June 1. In the Willamette Valley the moth is more serious than it has been for several years.

LEAF CRUMPLER (Mineola indiginella Zell.)

Nebraska

M. H. Swenk (May 15 to June 15): In Washington County there was in some orchards an abundance of the leaf crumpler following immediately upon the close of the spring cankerworm injury.

APPLE AND THORN SKELETONIZER (Hemerophila mariana Clerck)

New York

N. Y. State Coll. of Agr., Weekly News Letter June 8): First-brood skeletonizers are causing conspicuous damage on unsprayed trees in Niagara County.

EYE-SPOTTED EUDMOTH (Scilonota ocellana Schiff.)

esota

A. A. Granovsky (June 20): Immature forms and later adults were reared from the material collected in an apple orchard near St. Paul. Larvae caused considerable damage to apple grafts. This is apparently the first record of this species from the State of Minnesota.

FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)

York

N. Y. State Coll. of Agr., Weekly News Letter (June): During the first week in June leaf roller injury became quite severe in the Hudson River Valley. By the end of that week larvae were pupating. By the middle of the month the activity of these insects had dropped off to such an extent as to render damage by them negligible. (Abstract, J.A.H.)

LIME TREE LOOPER (Erannis tiliaria Harr.)

esota

A. G. Ruggles and assistants (June): This insect is associated with the canker worm in and about Minneapolis and St. Paul where considerable damage is being done. (Abstract, J.A.H.)

CANKER WORMS (Geometridae)

esota

A. G. Ruggles and assistants (June): The spring and fall canker worms are extremely abundant in the east central part of the State, extending 20 miles to the southwest of Minneapolis and St. Paul. Some orchards were completely defoliated. These insects are also doing serious damage to raspberries at many points. (Abstract, J.A.H.)

APPLE REDBUG (Lygidea mendax Reut.)

York

N. Y. State Coll. of Agr., Weekly News Letter (June): During the forepart of the month redbug injury became conspicuously noticeable, particularly in the western part of the State. (Abstract, J.A.H.)

APPLE LEAFHOPPERS (Cicadellidae)

achusetts

A. I. Bourne (June 26): Leafhoppers have multiplied to a considerable extent and the foliage is beginning to show injury and some spotting of fruit is already evident. The species which has been observed thus far is the rose leafhopper.

ecticut

P. Garman (June 23): Apple leafhoppers (Emponasca rosae L.) have developed in alarming numbers in many commercial orchards in Hartford, New Haven, and New London Counties and are doing a great deal of damage to fruit and foliage. They are more abundant than I have ever seen them at this time of the year.



- New York N. Y. State Coll. of Agr., Weekly News Letter (June): By the middle of the month these insects became very abundant throughout the State. By the third week in the month severe damage to foliage was very prevalent. (Abstract, J.A.H.)
- New Jersey N. J. / . Coll. of Agr., Weekly News Letter (June): Rather severe infestations of leafhoppers have been observed in a number of orchards in southern New Jersey. (Abstract, J.A.H.)
- Delaware L. A. Stearns (June 22): Apple leafhoppers are very abundant throughout the State.
- North Carolina C. H. Brannon (June 13): Leafhoppers are causing unusually widespread damage to apples in the mountains.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

- New York N. Y. State Coll. of Agr., Weekly News Letter (June): The first adult flies of the season were observed in Rockland County, June 11, and emergence was well under way throughout the Hudson River Valley during the third week in the month. (Abstract, J.A.H.)
- Missouri L. Haseman (June 22): The round-headed apple tree borers were found emerging June 21. There has been considerable damage to young apple trees.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

- Missouri L. Haseman (June 22): The round-headed apple tree borers were found emerging June 21. There has been considerable damage to young apple trees.
- Michigan R. H. Pettit (May 25): This is the most destructive wood borer in Michigan. As many as nine borers were removed from one little tree 5 feet high set out last season. It is not unusual to lose two-thirds of a stand of young fruit trees if control measures are not employed.
- Nebraska M. H. Swenk (May 15 to June 15): The flat-headed borer on apple trees was complained of during the period May 15 to June 15.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

- Massachusetts A. I. Bourne (June 26): In southern Hampden County the work of the oriental fruit moth just appearing. The first evidence of this type of injury would be June 8 to 10.
- Connecticut P. Garman (June 23): Infestation in New Haven, Hartford, and New London Counties is generally light, judging from first-brood twig injury.



e Island

A. E. Stene (June 24): The oriental fruit moth is scarce.

York

N. Y. State Coll. of Agr., Weekly News Letter (June): During the first week in June considerable twig injury to peaches was observed in Columbia County and larvae could be found in fruit during the third week in the month, but much less numerously than at this time last year. In the western part of the State twig injury was quite noticeable during the third week in June. (Abstract, J.A.H.)

ware

L. A. Stearns (June 22): The first brood at its peak was much less abundant than at the same time in 1931.

Virginia

L. M. Peairs (June 23): The oriental fruit moth is moderately abundant, infested twigs being hard to find around Morgantown.

h Carolina

L. Lutken (June 25): The oriental fruit moth is scarce in the northwestern part of the State.

gia

J. B. Gill (June 25): The oriental fruit moth is scarce at Albany.

O. I. Snapp (June 19): The infestation is very light at Fort Valley. Even twig injury is scarce.

T. H. Parks (June): Injury to peach terminals is not very noticeable at Columbus. It is probable that there will be very little damage to peaches in southern and central Ohio. More of the insects are present in lake-shore counties where there was a peach crop last year.

sylvania

L. L. Guyton (June 26): A survey of the peach growing districts in Erie County was made June 23. Two large orchards, the points of earliest known infestation, showed very few twigs damaged by larvae. One orchard about 5 miles removed from these showed a moderate infestation. These orchards are in the vicinity of North East. Orchards in the vicinity of Girard showed but little twig damage. Orchards in the vicinity of Beaver Falls were inspected June 24 and a moderate number of damaged twigs found.

ana

J. J. Davis (June 24): The oriental fruit worm is still not very conspicuous. We observed numerous injured twigs and live larvae in twigs in Harrison County, a few miles from the Ohio River, June 12. However, Mr. Montgomery's scouting has not revealed an appreciable infestation except in rare instances.

nois

W. P. Flint (June 20): The oriental fruit moth continues to be very scarce except in the extreme southern counties. The second brood is apparently just entering the twigs in the southern part of the State.

essee

H. G. Butler (June 23): The number of larvae at Harriman infesting twigs is considerably less than at this time a year ago. This may be due to a later season or a lighter infestation.

PEACH BORER (Synanthedon exitiosa Say)

Tennessee H. G. Butler (June 23): Adult emergence began June 11 in experimental blocks at Harriman. The first recorded emergence in 1930 occurred June 20.

Mississippi R. B. Deeg (June 19): The peach borer is very abundant in Lee County. Two orchards were practically killed.

PEACH TWIG BORER (Anarsia lineatella Zell.)

California S. Lockwood (June 5): The young from the spring brood of the peach twig borer are now doing some little damage to unsprayed peaches in the northern part of the Sacramento Valley.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Connecticut P. Garman (June 23): The plum curculio is appearing in usual abundance in New Haven County.

New York N. Y. State Coll. of Agr., Weekly News Letter (June): During the first week in June plum curculio injury was quite prevalent in the Hudson River Valley. In Dutchess County practically 100 per cent of the fruit was scarred by June 3. This very decided acceleration of the plum curculio is attributed to very warm weather which prevailed from May 26 to 29 and from June 2 to 4. By the middle of the month larvae were nearly full grown in Ulster County. In the western part of the State the greater part of the damage was to plums and prunes. (Abstract, J.A.H.)

New Jersey N. J. State Coll. of Agr., Weekly News Letter (June): For the State as a whole, plum curculio damage is much below normal and conditions have not been changed materially from those reported last month. (Abstract, J.A.H.)

Delaware L. A. Stearns (June 22): The plum curculio is very abundant in Sussex County. First-brood grubs are now in the soil.

Maryland E. N. Cory (June 22): The plum curculio is moderately abundant

North Carolina C. H. Brannon (June 13): Curculio damage to peaches is unusually light.

South Carolina A. Lutken (June 25): The plum curculio is moderately abundant in the northwest.

Georgia O. I. Snapp (June 1): The first beetle of the first 1931 generation at Fort Valley was observed today in a soil cell. However, we are not expecting adults to begin their escape from the soil until the third or fourth week in June. Transformation is taking place much later than usual. The first transformation last year was recorded on May 23, which was considered late.



(June 15): The first adults of the new generation emerged from the soil today. This is 9 days later than the first emergence in 1930 and 19 days later than the first emergence in 1929. There has been no rain in peach orchards of this locality during the past 5½ weeks, and therefore this record of first curculio adult emergence is perhaps earlier than that under orchard conditions, as we have kept our pupation boxes watered at intervals. The dry weather had retarded the ripening of the fruit, causing the harvesting season to be later than anticipated earlier in the season. On that account the latest variety of peaches in this locality, the Elberta, may not escape a second-brood curculio attack. We are not expecting any second-generation eggs in the field until July. (June 19): Adults of the first generation are emerging in numbers.

J. B. Gill (June 25): The plum curculio is scarce at Albany, and there has not been so much damage to peaches or plums as usually occurs.

J. R. Watson (June 22): The plum curculio is moderately abundant, though apparently less so than usual at this season.

T. H. Parks (June 24): The plum curculio still continues to be very scarce. Very few scars can be found on apples or stone fruits.

J. J. Davis (June 24): The plum curculio is reported abundant on plum at Otterbein June 1.

J. H. Bigger (June 15): The plum curculio is scarce in Calhoun County. A few were observed attacking apples May 13.

R. Hutson (June 20): The plum curculio is moderately abundant.

H. G. Butler (June 23): First insectary emergence of first-brood adults today, at Harriman. In 1930 the first of this brood emerged June 19.

L. Haseman (June 22): Through central Missouri the plum curculio has been less abundant than usual. They began their work on fruits later than usual but during June they have caused considerable damage to both sprayed and unsprayed fruits. Damage on apples generally is much less than usual.

R. W. Harned and assistants (June): Although reported abundant from many localities, the plum curculio does not seem to be as abundant as usual over the greater part of the State. (Abstract, J. A. H. J.)

#### FLOWER THRIPS (Frankliniella tritici Fitch)

S. Lockwood (June 5): During May the flower thrips was responsible for slightly more than normal damage to the stone fruits, nectarines, and peaches in San Bernardino and Riverside Counties.



WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

Mississippi

W. L. Gray (June 20): The West Indian peach scale is very abundant on wild plum in Adams County.

TARNISHED PLANT BUG (Lygus pratensis L.)

Mississippi

N. L. Douglass (June 20): ~~Eomh. damage~~ the tarnished plant bug has been noticed on peaches.

LEAF BUGS (Miridae)

Mississippi

D. W. Grimes (June 22): Severe damage to ripe and green peaches at Pickens. Damage most serious in orchard near Locust Grove, Holmes County.

PEAR

PEAR SLUG (Eriocampoides limacina Retz.)

Nebraska

D. B. Whelan (May 15 to June 15): The first eggs of the pear slug were hatched on May 25 at Lincoln. Reports of injury to cherry and pear leaves began to be received during the first week in June.

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York

N. Y. State Coll. of Agr., Weekly News Letter (June): During the first week in June egg-laying was general over western New York State and by the middle of the month second-brood nymphs were quite numerous. (Abstract, J.A.H.)

Illinois

W. P. Flint (June 20): The pear psylla has increased in abundance during the last month and is threatening injury in pear orchards in the Marion-Clay County section.

PEAR MIDGE (Contarinia pyrivora Riley)

New York

S. R. Shapley (June 15): The pear midge is becoming quite generally abundant in Genesee County and took a heavy toll of pear this year.

CHERRY

CHERRY CASE BEARER (Coleophora pruniella Clem.)

Minnesota

A. A. Granovsky (June 20): A single case with living larva was taken on an apple leaf near St. Paul. The case, which is completed and is characteristic in form, is well known to me as that of the cherry case bearer. This is evidently a first record

from the State. It is of interest to note its occurrence for the reason that this insect just recently has been reported as a serious pest in the cherry growing districts of Wisconsin and Michigan and the distribution of the species is not well determined.

BLACK CHERRY APHID (Myzus cerasi Fab.)

York N. Y. State Coll. of Agr., Weekly News Letter (June): During the first week in June black cherry aphids increased very rapidly in the Hudson River Valley, where the insect was difficult to control and considerable damage occurred. (Abstract, J.A.H.)

0 E. W. Mendenhall (June 23): Reports have been received from over the State that the black cherry aphids are bad on both sweet and sour cherry trees. Damage to leaves is noticeable.

land J. A. Hyslop (June 15): I did not see a single aphid this year on a sweet cherry tree at Avanel that is usually severely infested.

h G. F. Knowlton (June 22): The black cherry aphid has been very abundant and damaging in Davis County orchards this spring.

CHERRY FRUITFLIES (Rhagoletis spp.)

State

York N. Y. / Coll. of Agr., Weekly News Letter (June): During the first week in June adult flies of R. fausta O.S. began emerging in the Hudson River Valley, but up to the end of the month neither this species nor R. cingulata Loew appeared to be normally abundant. (Abstract, J.A.H.)

higan R. H. Pettit (June 8): The first specimens of R. fausta emerged at Gobles in Van Buren County on the 5th inst. The specimens were collected by Mr. A.H. Beyer, one of the inspectors of the State Department of Agriculture, and sent here for determination. This is a little earlier than they were observed last year. Perhaps we got the first ones out. A few advance black-bodied cherry fruit flies, R. cingulata, were captured on June 5 at Gobles by Mr. Beyer. This is the first emergence recorded for either fruit fly for 1931. Gobles usually produces flies earlier than other localities.

gon Oreg. Agr. Coll. Exp. Sta. S. C. Jones reports that cherry fruit flies, R. cingulata, began emerging June 2 in the Salem and Dallas district, Willamette Valley. They have been emerging in increasing numbers ever since.

SAY'S BLISTER BEETLE (Pomohopoea sayi Lec.)

sylvania C. A. Thomas (June 23): A number of specimens of P. sayi have just been received from Lake Ariel, Wayne County, in the northeastern corner of the State, where they were said to be damaging roses and cherry trees.



GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

- New York N. Y. State Coll. Agr., Weekly News Letter (June 1): Grape leafhoppers are very numerous in Dutchess County.
- New Jersey N. J. State Coll. Agr., Weekly News Letter (June 23): Grape leafhoppers are appearing in rather large numbers in some of the orchards where nicotine has been omitted in Morris County.
- Delaware L. A. Stearns (June 22): Grape leafhoppers are very abundant throughout the State. First-brood nymphs occurred at Bridgeville June 1.

GRAPEVINE APHID (Macrosiphum illinoisensis Shim.)

- Maryland W. S. Abbott (June 3): M. illinoisensis is just appearing on grape at Silver Spring.

AN APHID (Aphis ripariae Oest.)

- Mississippi H. Dietrich (June): An aphid (Aphis ripariae) was moderately abundant on grapes at Lucedale early in June.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

- Massachusetts A. I. Bourne (June 26): The rose chafer is apparently at least normally abundant on its usual host plants. In addition it has been found to be causing considerable injury to foliage of young apple trees quite generally throughout eastern Massachusetts. In the Connecticut River Valley section I have noted that beetles were scarring young forming fruit. Prof. Whitcomb reports that he has observed them skeletonizing the foliage of bush string beans in the market garden section around Waltham.
- Vermont H. L. Bailey (June 23): The rose chafer is very abundant in several sections.
- Delaware L. A. Stearns (June 22): The rose chafer is very abundant on all host plants throughout the State.
- Ohio E. W. Mendenhall (June 18): The rose chafer is quite bad on rose bushes, destroying the bloom, in Painesville.
- Indiana J. J. Davis (June 24): The rose chafer destroyed a third of a 15-acre cornfield at Winamac June 20. They were reported causing much damage to grapes and other fruits at Fort Wayne, June 9, and damaging green apples at Culver June 13.



EIGHT-SPOTTED FORESTER (Alypia octomaculata Fab.)

O. G. Babcock (June 2): For the past two weeks there has been an extremely severe outbreak of an insect pest of grapevines, the vines being entirely defoliated from the attacks of this pest. At present there is a let-up in the damage of this moth.

CURRENT

CURRENT STEM GIRDLER (Janus integer Norton)

Y. Y. State Coll. of Agr., Weekly News Letter (June 8): The current stem girdler is causing considerable injury in several plantings of currants in Chautauqua County.

IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

Dakota H. C. Severin (June 10): The imported current worm is reported as causing usual damage on currants and gooseberries in eastern South Dakota.

aska D. B. Whelan (May 15 to June 15): The larvae began pupating on May 23, and adults of the second generation began emerging June 10. Second-generation eggs were found on June 12, and young larvae of the second generation on June 15, at Lincoln.

CURRENT APHID (Myzus ribis L.)

G. F. Knowlton (June 15): The current aphid is causing some damage wherever red currants have been examined in northern Utah.

Dakota A. A. Penn (June 9): Currant aphids are becoming quite numerous in Works and Dickey Counties. Have not observed any on plums or elms as yet.

GOOSEBERRY

CURRENT FRUIT FLY (Epochra canadensis Loew)

on D. C. Mote (June 20): S. C. Jones reports that flies have been pupating for the past two weeks. Large numbers have now left the gooseberries.

GOOSEBERRY FRUIT WORM (Zophodia grossulariae Riley)

aska D. B. Whelan (May 15 to June 15): The gooseberry fruit worm was moderately injurious to gooseberries at Lincoln during the first week in June.

Utah

G. F. Knowlton (June 20): The gooseberry fruit worm has caused from 5 to 10 per cent damage to gooseberry patches on Bountiful Bench this year.

CRANBERRY

CRANBERRY ROOT WORM (Rhabdopterus picipes Oliv.)

New York

N. Y. State Coll. of Agr. Weekly News Letter (June 22): Cranberry root worms were found in the pupal stage close to the top of the ground in Wayne County June 17.

BLUEBERRY

CRANBERRY FRUIT WORM (Mineola vaccinii Riley)

Florida

F. W. Walker (June 22): The blueberry worm did much damage in parts of western Florida in May. In one grove near Milton fully 60 per cent of the crop was destroyed.

GOOSEBERRY FRUIT WORM (Zophodia grossulariae Riley)

Mississippi

R. W. Harned (June 19): Larvae tentatively identified as Z. grossulariae were found injuring blueberries at Gulfport on June 6 and at Ocean Springs on June 2.

PECAN

PECAN CIGAR CASE BEARER (Coleophora caryaefoliella Clem.)

Mississippi

F. P. Amsler (June 18): The pecan cigar case bearer is still doing damage to pecans in Hancock, Jackson, and Harrison Counties. There are heavier infestations than usual in the large orchards.

PECAN CASE BEARER (Acrobasis juglandis LeB.)

Georgia

J. B. Gill (June 25): Severe infestation of the pecan leaf case-bearer occurred in pecan orchards in southern Georgia and considerable damage was done in untreated orchards. Adult moths have been emerging since the third week in May.

Mississippi

J. E. Lee (June 20): The pecan leaf case bearer is present in large numbers in an orchard near Picayune.

H. Gladney (June 20): The pecan leaf case bearer is moderately abundant at Ocean Springs.

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Georgia

J. B. Gill (June 25): There has been only slight damage to the pecan nut crop in Georgia by the first-brood larvae of the pecan nut case-bearer. For the past week the adults of this species

have been emerging, and on account of the mild infestation by the first-brood larvae no severe damage to the nut crop is anticipated by the second generation. It is invariably the first-brood larvae that cause the heavy damage to the nut crop. First-brood larvae have been found to be quite heavily parasitized.

Florida

J. R. Watson (June 22): Nut case-bearers, Acrobasis spp., have been very destructive to pecans in the northeastern part of Florida. They have destroyed over 75 per cent of the crop about Jacksonville. About Monticello (F. W. Walker) they are not so abundant as they were last year and have destroyed about 20 per cent of the crop. In western Florida there is practically no damage (F. W. Walker). They were two weeks later than usual in emerging this year.

PECAN BUDMOTH (Proteopteryx belliana Sling.)

Indiana

J. J. Davis (June 24): The pecan bud worm was reported from Russiaville, June 8, as destructive to buds of young pecans and, to a lesser extent, walnut trees.

Mississippi

R. P. Colmer (June 2): Pecan budmoth larvae caused severe damage to young pecan trees in the vicinity of Three Rivers.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia

J. B. Gill (May 27): In the vicinity of Albany, the pecan shuck worm is already causing damage to the green nuts and this pest will no doubt be troublesome in many pecan sections of the State, resulting in considerable damage to the immature nuts and the crop at harvest time.

Mississippi

R. W. Harned (June 19): A correspondent at Learned sent to us on June 12 some pecans containing shuck worm larvae. He wrote: "I find a great number of the pecans in my orchard injured in this manner. The insect started its work about a week ago. A greater percentage of damage seems to have been done on the Pabst trees than any others."

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Georgia

J. B. Gill (June 25): The walnut caterpillar is just beginning to make its appearance in the pecan orchards of Georgia. Evidently there will be only minor injury by this pest during the ensuing season.

Mississippi

J. P. Kisilanko (June 19): Three adults of the walnut caterpillar were caught in the light trap at Wiggins on June 19. No colony in the orchards has yet been observed this year.

J. M. Langston (June 23): I observed a colony of walnut caterpillars on a pecan tree at A. & M. College, on June 22. This is the first time I have observed this species during 1931.



FALL WEBWORM (Hyphantria cunea Drury)

South Carolina P. K. Harrison (June 15): The fall webworm is attacking pecan at Fairfax.

Georgia J. B. Gill (June 25): The fall webworm has been showing up in the pecan orchards of Georgia since the third week in May. With a sizeable first brood as has occurred it is expected that the second-brood larvae will be quite abundant and damaging in unsprayed pecan orchards.

Mississippi R. W. Harned and assistants (June): One fall webworm colony was found on pecan at Lucedale on June 3. The first specimens were observed at Centreville on June 9, at Moss Point on June 15, and near Columbia on June 19. Several other colonies were noted since that time at Pascagoula and vicinity.

A MOTII BORER (Synanthedon scitula Harr.)

Mississippi H. Dietrich (June 22): The pecan borer (Aegeria scitula) is doing some damage to grafts on pecans near Avera.

PHYLLOXERA (Phylloxera spp.)

Mississippi R. W. Harned (June 19): Pecan twigs containing galls probably caused by P. devastatrix Perg. were collected at Natchez, on June 8, by Inspector W. L. Gray. He reported that these galls were very abundant on a large Schley pecan tree.

Louisiana W. E. Hinds (June 23): The pecan phylloxera (P. caryaecaulis) Fitch, has appeared in unusual numbers infesting many trees which are from 40 to 50 feet high and damaging some varieties which have hitherto appeared to be practically immune to their attack.

A STINK BUG (Euschistus euschistoides Voll.)

Georgia H. S. Adair (June 24): The brown stink bug is rather numerous in some pecan orchards in Albany and adjoining localities. Nymphs were observed earlier in the season feeding on a species of barley growing among Austrian peas which are used as a winter cover crop in pecan orchards.

CITRUS

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida J. R. Watson (June 22): The purple scale is moderately abundant, perhaps more abundant than usual. Drought has prevented the proper development of entomogenous fungi.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Georgia J. B. Gill (May 27): There have been reported infestations of the cottony-cushion scale in Albany, Thomasville, Blackshear, Claxton, and Savannah.



## T R U C K - C R O P I N S E C T S

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Iowa C. J. Drake (June 27:): The first specimens appeared in Ames May 22. In going over our records we find that during the past six years it has put in its first appearance during the last ten days of May.

H. E. Jaques (June 4): The spotted cucumber beetle has just recently made its appearance in our collections for this spring, the earliest date being June 3 for southeastern Iowa.

Louisiana W. A. Douglas (May 27): A farmer left specimens of the southern corn root worm with the report that this insect was doing a lot of injury to his rice.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon D. C. Mote (June 20): B. G. Thompson reports that first adults of the second brood were obtained in breeding cages at Corvallis but none in the field as yet. T. R. Chamberlin reports first larvae found in the field in Washington County on May 12. These were in seedling clover and from 3 to 6 mm. long. On May 21 eggs were being laid in seedling Polygonum on overflow land from which the water had recently been drawn. Beetles were very numerous on the damp earth, especially among the seedlings, upon which they were feeding extensively.

## BLISTER BEETLES (Meloidae)

Kentucky W. A. Price (June 25): Blister beetles are doing much damage to potatoes at Tyner, Grayson, and Kingswood.

Iowa C. J. Drake (June 27): Blister beetles, Epicauta cinerea Forst., are extremely abundant and widely distributed in the State. A large number of telephone calls and letters have been received from farmers and county agents asking about remedial measures. The beetles seem to be most abundant in alfalfa fields and are doing considerable damage to alfalfa and a number of other plants.

South Dakota H. C. Severin (June 10): Blister beetles are reported as causing severe damage to alfalfa, beans, peas, caragana, and potatoes in the eastern and central parts of the State.

Wyoming C. L. Corkins (June 23): Coincident with the rise in grasshopper population, an outbreak of the blister beetle Epicauta vittata Fab. has been reported by C. H. Llewellyn, County Agent from Sheridan County, where severe damage is being done to trees, especially the Siberian pea tree.



FLEA BEETLES (Halticinae)

- Connecticut A. E. Wilkinson (June 9): There has been much damage to first leaves of tomato and eggplant by flea beetles in Thomaston, Northfield, Campville, and Terryville. (June 4). Have also noticed many flea beetles on melons, cucumbers, and squash and on freshly set truck plants, at Storrs.
- Pennsylvania J. R. Stear (June 22): Flea beetles on potato, eggplant, and tomato are very abundant at Ligonier.
- Illiana J. J. Davis (June 24): The striped flea beetle (Systema taeniata Say) was reported damaging tomato at Ladoga, June 20, beans and beets at Indianapolis, June 19, and beans at Franklin, June 22.
- Indiana C. J. Drake (June 27): The larvae of a species of flea beetle did serious injury to onion seedlings in the vicinity of St. Ansgar and Clear Lake this spring. This insect begins to work as soon as the onions begin to sprout and destroys the young seedlings before they are 3 inches tall. A 20-acre field near St. Ansgar was almost totally destroyed by larvae, counts revealing that 90 per cent of the onions had been destroyed by the larvae.
- North Dakota J. A. Munro (June 17): Flea beetles are commonly noticed in gardens in the vicinity of Fargo and causing injury to radish, rutabaga, and a few other garden plants.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

- New York N. Y. State Coll. of Agr., Weekly News Letter (June): A few bean plantings in Genesee and Ontario Counties in western New York were seriously damaged during the first week in June, some fields having to be replanted. (Abstract, J.A.H.)
- Illiana J. J. Davis (June 24): The seed corn maggot was reported damaging corn at Boston and Royal Center (May 26 and 27), and did much damage to lima beans at Richmond, June 3, and to beans at Portland, June 6.
- Illinois C. C. Compton (June): Adults appeared in very large numbers in truck fields during the week of June 8. Cucumbers have been severely injured in some cases in Des Plaines.
- Illinois J. H. Bigger (June 15): The seed corn maggot is very abundant in western Illinois. They have been present in unusual numbers this spring.
- Kentucky W. A. Price (June 25): The seed corn maggot did much damage to corn at Sharpsburg.

## Michigan

R. Hutson (June 12): On June 12 I visited several melon fields in southwestern Michigan, particularly Van Buren County. These melon fields had been set out a few days before in veneer boxes, but were ~~were~~ <sup>were</sup> falling down rapidly. Examination showed them to be troubled with the seed corn maggot. We have had numerous reports of injury from this insect to beans and corn and the insect is reported as being particularly injurious to seed potatoes in Charlevoix County.

## Minnesota

A. G. Ruggles and assistants (June): The seed corn maggot was very abundant in Minneapolis and St. Paul, where it was doing some damage. (Abstract, J.A.H.)

## Nebraska

M. H. Swenk (May 15 to June 15): The seed corn maggot practically destroyed a field of corn in Frontier County during the first week in June.

A NYMPHALID (Euptoieta claudia Clem.)

## Tennessee

S. Marcovitch (June 24): This insect destroyed the foliage of beans, sweetpotatoes, and cornpeas. The butterflies have emerged and can be seen flying about. It is recorded by Holland as feeding on the passion flower.

## APHIDS (Aphidae)

## New Jersey

N. J. State Coll. of Agr., Weekly News Letter (June): Aphids attacking various truck crops appeared to be unusually numerous over the greater part of the State (Abstract, J.A.H.)

GARDEN SPRINGTAIL (Sminthurus hortensis Fitch)

## Connecticut

N. Turner (June 18): One acre of <sup>young</sup> spinach at Ledyard was heavily infested.

C. D. Lewis (June 12): The garden springtail has absolutely killed melons and is attacking cucumbers and pumpkins at Southington and Manchester.

POTATO AND TOMATOCOLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

## Maine

H. B. Peirson (June 23): The first specimen was found June 4 in Augusta.

## Vermont

H. L. Bailey (June 23): The Colorado potato beetle is very abundant in Orange and Washington Counties.

New York

N. Y. State Coll. of Agr. Weekly News Letter (June): Adult beetles appeared in the field throughout Eastern New York very early in the month. By the middle of the month egg laying was well under way. During the third week in the month the first larvae were noticed. This insect appears to be unusually numerous throughout the greater part of the State. (Abstract, J.A.H.)

New Jersey

N. Y. State Coll. of Agr., Weekly News Letter (June): The rather heavy potato beetle infestations reported in the last number of the Survey Bulletin prevailed during June. Many reports of damage by this insect to tomatoes were also received. (Abstract, J.A.H.)

Maryland

E. N. Cory (June 26): The Colorado potato beetle is very abundant on tomato in Anne Arundel County.

J. A. Hyslop (June 12) The Colorado potato beetle is more abundant than for several years at Anabel. One out of six plants is nearly defoliated and every plant has some larvae. Spraying and dusting are necessary.

Virginia

H. G. Walker (June 24): The Colorado potato beetle was fairly abundant in the Tidewater section of Virginia early in the season.

Illinois

J. H. Bigger (June 15): The Colorado potato beetle is very abundant in central Illinois. Potatoes are suffering rather severely.

C. C. Compton (June): This insect is more abundant than it has been for several years. Heavy deposition of eggs on potatoes and eggplants in Des Plaines.

Minnesota

A.G. Ruggles and assistants (June): This insect is appearing earlier than usual in this State and is already reported as very abundant in several counties well scattered over the State. (Abstract, J.A.H.)

South Dakota

H. C. Severin (June): The Colorado potato beetle has been reported attacking potatoes at Brookings. Rare, but first seen June 1.

Iowa

C. N. Ainslie (June 15): An unusual outbreak of this pest is reported from a large area in northwestern Iowa. Adults appear very rarely, but the larvae swarm on the young potato plants.

H. E. Jaques (June): The Colorado potato beetle is very abundant in Carroll, Chickasaw, and Emmet Counties.

Tennessee

A.C. Morgan, J.U. Gilmore and J. Milan (June 22): The Colorado potato beetle has been scarcer on potato around Clarksville than at any time in the last few years in this locality.

Missouri

L. Haseman (June 22): The Colorado potato beetle is less abundant than usual though it has done considerable damage in some sections.



Oklahoma C. E. Sanborn (May 28): The Colorado potato beetle is very abundant.

Mississippi R. W. Harned and assistants (June): The Colorado potato beetles are unusually abundant and causing enough damage to warrant control measures in two areas in Mississippi, one in the northeastern and the other in the southeastern part of the State. (Abstract, J.A.H.)

POTATO STALK BORER (Trichobaris trinotata Say)

Nebraska M. H. Swenk (May 15 to June 15): The potato stalk weevil badly injured some potato fields in Sarpy County during the last week in May.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

New York N. Y. State Coll. of Agr., Weekly News Letter (June): The potato flea beetle was quite prevalent throughout the latter part of the month, damage being very severe in some localities. Most of the reports came from the central and western parts of the State. (Abstract, J.A.H.)

Indiana J. J. Davis (June 24): The common potato flea beetle was destructive to potato at Mulberry, June 3.

North Dakota J. A. Munro (June 17): Several reports of potato flea beetle injury have been received of late for this vicinity.

Mississippi G. L. Bond (June 20): Potato flea beetles are doing some damage to potato plants near Waynesboro and Bucatunna.

Colorado C. P. Gillette (June 26): The potato flea beetle is very abundant on potatoes at Greeley.

Utah G. F. Knowlton (June 22): Flea beetles are damaging potatoes in many northern Utah potato areas.

POTATO APHID (Illinoia solanifolii Ashm.)

Maryland E. N. Cory (June 19): The pink and green potato aphid is much more abundant on potatoes and tomatoes in early potato sections of the lower Eastern Shore counties than normal. (June 24): This aphid is very abundant at White Haven.

Virginia H. G. Walker (June 24): The pink and green potato aphid is very abundant on potatoes throughout eastern Virginia and is causing considerable damage on the Eastern Shore Peninsula. In the Norfolk district eggplants also have heavy infestations.

Ohio

T. H. Parks (June 23): These aphids are becoming very plentiful on the foliage of potato and tomato in central and western counties. Some damage is in prospect. This is the heaviest outbreak since 1917.

Indiana

J. J. Davis (June 24): Aphids were reported unusually abundant on tomato, June 17 to 22, at Frankfort, Matthers, Indianapolis, and Kokomo.

#### POTATO LEAFHOPPER (Empoasca fabae Harr.)

Iowa

H. E. Jaques (June): Potato leafhoppers are very abundant in Audubon, Buchanan, and Washington Counties.

#### BEANS

#### MEXICAN BEAN BEETLE (Epilachna ~~cornuta~~ Muls.)

Connecticut

N. Turner (June 23): The Mexican bean beetle is present in every county in the State and the overwintering adults are causing serious damage in Fairfield County. In one place in Hartford County, near the Massachusetts State line, serious damage was noted. The beetles destroyed late beans there last year. In the rest of the State the beetle is present in small numbers and causes little damage at present. At the present time second-instar larvae are present in the southern part of the State.

New York

H. C. Hockett (June 15): The Mexican bean beetle is becoming very noticeable at Riverhead.

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (June): During the first week in June Mexican bean beetles appeared in numbers in practically all parts of the State. On June 3 the first eggs were noticed in Cumberland. On June 4 eggs were reported from Camden County, and on June 20 the first eggs were observed in northern Jersey in Morris County. These insects became so destructive that by the middle of the month the stock of magnesium arsenate in the hands of many dealers was exhausted. (Abstract, J.A.H.)

Maryland

E. N. Cory (June 26): In the upper section of Anne Arundel County beans have very light, spotted infestation with last stage larvae.

Virginia

G. E. Gould (June 24): The Mexican bean beetle is moderately abundant this season and appears to be causing slightly more damage than last year. The first adult beetles of the first brood are now starting to appear. In our hibernation studies we obtained an average survival of 45 per cent from four cages located in different types of woods. A cage in a pure pine woods had the best survival, with 69 per cent living through the winter.

- Kentucky W. A. Price (June 3): The beetles were present in large numbers at Mt. Sterling, Greensburg, and Bloomfield.
- Colorado C. P. Gillette (June 26): The Mexican bean beetle is very abundant in northern Colorado and in Mesa, Delta, and Montrose Counties.

### PEAS

#### PEA APHID (*Illinoia pisi* Kalt.)

- Connecticut A. E. Wilkinson (May 29): Pea aphids are attacking 4 acres of peas at Vernon. The damage is just starting, but easily found in gardens.
- Pennsylvania J. N. Knull (June 19): The pea aphid is very abundant on peas in several gardens at Mont Alto.
- Ohio T. H. Parks (June 20): The pea aphid is more abundant than usual in central Ohio. The good growing weather with plenty of rains enabled peas to grow away from the pest and very few fields were seriously damaged.
- Wisconsin J. E. Dudley (June 22): In fields of late peas infestation is heaviest in eight years and bids fair to entirely ruin the crop unless nature comes to the rescue. Very large number of natural enemies with considerable variety of species observed in alfalfa and early peas, but a noticeable paucity in late peas.
- Mississippi F. P. Amsler (June 18): Pea aphids are very abundant at Gulfport, Harrison County.
- Oregon Oreg. Agr. Coll. Insect Pest Report (May): L. P. Rockwood reports aphids to be scarce on fall sown vetch; cleaned up by natural enemies in May. Moderately abundant on spring sown vetch in Washington and Benton Counties. Moderately abundant on Austrian field peas in some fields of Benton, Washington, and Yamhill Counties. Very abundant in spots in a few fields in Benton County. Badly damaged plants showing some recovery.

### CABBAGE

#### IMPORTED CABBAGE WORM (*Pieris rapae* L.)

- Wisconsin C. H. Koonz (June 24): The cabbage worm is very abundant.
- Iowa H. E. Jaques (June): The cabbage worm is very abundant in Tama and Union Counties.



ennessee

A.C.Morgan, J.U.Gilmore, and J. Milam (June 22): The imported cabbage worm has been unusually abundant around Clarksville.

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Virginia

H. G. Walker and G. E. Gould (June 15): The larvae were quite abundant in many cabbage fields of the Norfolk district and caused considerable loss by chewing into the small cabbage heads. This is the first record of noticeable injury from this insect in recent years.

CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Connecticut

A. E. Wilkinson (May 28): The cabbage maggot is attacking cabbage at Middletown. The damage is from 5 to 15 per cent on the 13 farms visited, in the neighborhood of Middletown. On nine farms visited at Cheshire and Milldale, the damage was from 5 to 25 per cent. It was worse at Milldale, where it has been common for years. One grower alone will probably lose 2,000 to 3,000 plants. At North Devon the one farm not treated shows 66 per cent loss.

L. M. Chapman (June 2): Noted several fields at Westport and Bridgeport with damaged plants running up to 60 per cent of stand. Nearly every field showed some injury.

New York

N. Y. State Coll. of Agr., Weekly News Letter (June): The cabbage maggot is so serious in central and western New York that unscreened cabbage seed beds were damaged from 15 to 60 per cent and in a few cases all of the plants were destroyed during the first two weeks in the month. (Abstract, J.A.H.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (June): Many fields of cabbage were practically ruined by cabbage maggots late in May and early in June in northern New Jersey. This insect is said to have been much more serious than it has been for several years. (Abstract, J.A.H.)

Diana

J. J. Davis (June 24): The cabbage maggot was destructive to cabbage at Carthage, June 8, and to radish at Greensboro, June 4, and at Pierceton, June 14.

ntucky

W. A. Price (June 25): The cabbage root maggot is doing considerable damage at Dry Ridge.

consin

C. H. Koonz (June 24): The cabbage maggot is very abundant.

A CHRYSOMELID (Entomoscelis adonidis Pallas)

nesota

A. G. Ruggles (June 24): This chrysomelid larva which was eating the centers out of young plants at Sax, early in June, has been determined by H. S. Barber as Ent. adonidis.

STRAWBERRY

STRAWBERRY LEAF ROLLER (Ancylis comotana Frohl.)

- Utah G. F. Knowlton (June 8): Strawberry leaf rollers have been causing damage in Utah County during the last two weeks, according to Mr. Anson Call.
- New Jersey N. J. State Coll. of Agr., Weekly News Letter (June): During the last week in the month this insect appeared in unusual numbers in parts of Cumberland and Atlantic Counties. In many cases it was doing serious damage. (Abstract, J.A.H.)
- Kansas H. R. Bryson (June 22): Dr. R. C. Parker reports larger numbers of adult strawberry leaf rollers present this year than at any time for the past two years. Evidently this insect is beginning to make a recovery from the heavy parasitism of two years ago.

A TORTRICID (Cnephasia longana Haworth)

- Oregon D. C. Mote (June 20): W. D. Edwards reports worms more numerous this year than last. One iris planting had about a 40 per cent infestation. Injury on strawberries has run as high as 20 per cent in a planting. On June 8 the worms were found pupating in numbers.

STRAWBERRY ROOT WEEVIL (Brachyrhinus spp.)

- Northeastern States A. I. Bourne (June 26): Many complaints have been received from strawberry planters of damage caused by the strawberry crown girdler B. ovatus L. The adult beetles appeared June 18. At the present time there are few, if any, larvae or pupae to be found.
- Utah G. F. Knowlton (June 22): On June 18 strawberry root weevil B. ovatus L. and B. rugosostriatus Goeze, were reported damaging strawberries in several parts of Cache County. They are less destructive than last year in Utah County.

SUGARCANE BEETLE (Euethola rugiceps Lec.)

- Mississippi J. Milton (June 20): On May 20 the sugarcane beetle was found to be causing considerable damage to a strawberry field near Corinth, Alcorn County. Probably 5 to 10 per cent of the plants were killed. The plants were set in the spring on sod land.

MILLIPEDES (Julus sp.)

- Nebraska M. H. Swenk (May 15 to June 15): In southern Gage County, during the first week in June, millipedes (Julus sp.) were reported doing considerable damage to strawberry fruits.



ASPARAGUS

ASPARAGUS BEETLES (Oriocérís spp.)

Connecticut

A. E. Wilkinson (May 27): A very few of the common asparagus beetles (C. asparagi L.) were observed but plenty of the 12-spotted beetle (C. duodecimpunctata L.) -- more than I have seen for years; also as common in Highwood, Mt. Carmel, and Cheshire. Two young beds of 5 acres and  $3\frac{1}{2}$  acres are set back, no leaves left. (June 2): Reported by almost every one of the 35 growers at a meeting last night, from Huntington, Devon, Medford, Bridgeport, Fairfield, Trumbull, Stratford, Westport, Green Farms, and Easton.

New York

N. Y. State Coll. of Agr., Weekly News Letter (June 1): Asparagus beetles of both species are doing considerable feeding and egg laying in Chautauqua County.

Indiana

J. J. Davis (June 24): Asparagus beetles (species unknown) were reported from Aurora and South Bend, May 25. Both species are now common annually at Lafayette.

Illinois

C. C. Compton (June 3): The common asparagus beetle (C. asparagi) has been very destructive this spring in Cook County.

Iowa

C. J. Drake (June 27): The asparagus beetle, (C. asparagi L.,) caused a considerable amount of worry to asparagus growers in the vicinity of Marshalltown and Waterloo. In some fields they were so abundant that the growers had to spray the asparagus and then throw away the cuttings in order to harvest later shoots. The beetles deposited such a large number of eggs on the cuttings that it was impossible to use the asparagus for canning purposes, 100 or more eggs frequently being found on a single stalk.

H. E. Jaques (June 4): The asparagus beetle C. asparagi, which we reported as showing up for the first time in the southeastern part of the State last year, seems to be considerably more abundant this year than last.

Colorado

C. P. Gillette (June 26): The asparagus beetle (C. asparagi) has been increasing for years from Ft. Collins to Denver, and is becoming moderately abundant.

California

J. C. Elmore (June 2): One or two adult asparagus beetles (C. asparagi) could be found on nearly every plant of asparagus, and the larvae were numerous on about 20 per cent of the plants at Downey. Two 10 or 12 acre fields are infested.



## CUCUMBERS

STRIPED CUCUMBER BEETLE (Dinbrotica vittata Fab.)

- Connecticut A. E. Wilkinson (May 29): The striped cucumber beetle has attacked melons, cucumbers and squash. It has destroyed all young plants in many gardens at Storrs.
- New York F. G. Butcher (June 3): Found the first beetles June 1 on volunteer squash. This is 12 days earlier than last year. They are certainly thick on these plants.
- Pennsylvania J. R. Stears (June 22): The striped cucumber beetle is very abundant at Ligonier.
- Florida J. R. Watson (June 22): The striped cucumber beetle is very abundant in the Everglades, attacking cucumber, squash, melons, wild gourds, sunflowers, dahlias, and to a slight extent gladioli blooms (R. N. Lodell).
- Ohio T. H. Parks (June 24): Truck growers are finding this insect more troublesome than usual. A canning company at Celina has purchased and is distributing to pickle growers over 40 tons of calcium arsenate and gypsum mixture for dusting cucumbers.
- Indiana J. J. Davis (June 24): The striped cucumber beetle was reported damaging melons from May 25 to June 10.
- Illinois C. C. Compton (June 9): The striped cucumber beetle is very abundant in Des Plaines, where it is severely injuring cucumber and melons.
- Kentucky W. A. Price (June 25): The striped cucumber beetle is very abundant on melons, lima beans, and cucumbers generally over the State.
- Minnesota A. G. Ruggles and assistants (June): The first adult was seen on the University Farm on May 28. This insect has been reported as very abundant from several counties south of the Minnesota River. (Abstract, J.A.H.)
- Iowa C. J. Drake (June 27): The striped cucumber beetle is very common throughout the State. It seems to be most abundant in the vicinity of Muscatine and Ames.
- Missouri L. Haseman (June 22): In spite of the favorable winter throughout central Missouri, the beetles apparently left winter quarters later than usual, but now they are beginning to collect in goodly numbers on unprotected cucurbits.
- Nebraska M. H. Swenk (May 15 to June 15): More than the usual number of reports of the striped cucumber beetle were received during the last week in May and the first half of June.

GARDEN FLEA HOPPERS (Halticus citri Ashm.)

Virginia H. G. Walker (June 18): A heavy infestation of the garden flea hopper was found on cold-frame cucumbers at Deep Creek. Both nymphs and adults were present in large numbers in one field, but were apparently absent in the surrounding fields.

FALSE CHINCH BUG (Nysius ericae Schill.)

Arizona C. D. Lebert (June 24): The false chinch bug is very numerous on young melons west of Phoenix, killing many plants in spots throughout the field. The bugs apparently had migrated from an old lettuce field to the east.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Virginia H. G. Walker (June 24): Squash bugs were rather numerous on cymbling and squash plants in the Norfolk area on June 16.

Mississippi R. W. Harned and assistants (June): Squash bugs have destroyed many acres of squash in Harrison, George and Simpson Counties.

G. F. Knowlton (June 4): Squash bugs are moderately abundant. Beginning to cause some injury to squash at Garland.

SQUASH BEETLE (Epilachna borealis Fab.)

Connecticut N. Turner (June): The squash lady beetle is present in much greater numbers than for the past few years.

CELERY

CELERY LOOPER (Autographa falcifera Kby.)

C. J. Drake (June 27): The celery looper is doing a considerable amount of damage to celery, lettuce, peas, and radishes in gardens in the State. Reports of injury have been received from Ares, Nevada, Marshalltown, and Toledo.

EGGPLANT

EGGPLANT FLEA BEETLE (Epitrix fuscula Crotch)

Nebraska D. B. Whelan (May 15 to June 15): The eggplant flea beetle attacked young eggplants at Lincoln as early as June 6. Eggs were obtained in cages during the second week of June.

EGGPLANT LACEBUG (Gargaphia solani Heid.)

Virginia

H. G. Walker (June 24): The eggplant lacebug is moderately abundant on eggplants in most fields in the Norfolk area.

TOBACCO STALK BORER (Trichobaris mucorea Lec.)

Arizona

C. D. Lebert (June 24): The Jimson weed borer was found to be tunnelling the main stems of eggplant near Phoenix. Several half-grown larvae were taken from one vine.

SWEETPOTATO

ARGUS TORTOISE BEETLE (Chelymorpha cassidea Fab.)

North Carolina

C. H. Brannon (June 26): The argus tortoise beetle is causing serious damage to sweetpotatoes in Currituck County.

SPINACH

SPINACH LEAF MINER (Pegomyia hyoscyami Panz.)

New York

H. C. Huckett (June 15): We have had an unusually severe infestation of the spinach leaf miner around Riverhead.

Connecticut

R. B. Friend (June 27): This insect has not been abundant during the last few years, but this year it has caused much damage to early spinach and beets.

BEETS

BEET LEAFHOPPER (Eutettix tenellus Bak.)

Utah

G. F. Knowlton (June 21) The beet leafhopper is very abundant in northern Utah. Some severe curly top has appeared in the northern Utah area, but not a high percentage as yet.

BEET WEBWORM (Loxostege sticticalis L.)

Utah

G. F. Knowlton (June 8): During the past few years only a few local outbreaks of the sugar-beet webworm have been observed in northern Utah. At the present time the adult moths are generally quite abundant and slight damage has been observed in many beet fields. Serious injury is now occurring in the low areas west of Springville, and in some fields northeast of Spanish Fork. More damage is anticipated.



HOP FLEA BEETLE (Psylliodes punctulata Melsh.)

G. F. Knowlton (June 15): The hop flea beetle caused damage to sugar beets in a few fields at Wallsburg.

TORACCO

POTATO TUBER WORM (Plutheorimaea operculella Zell.)

T. S. Chamberlin (June 20): A slight infestation of this insect occurred throughout the tobacco region in Gadsden County. No commercial damage has resulted so far.

W. A. Price (June 25): The tobacco split worm has now arrived in Kentucky. During the past week specimens were received in the office from Owensboro, Bremen, Lexington, and Utica. According to our office records this is the first appearance of this pest in the State.

A. C. Morgan, J. U. Gilmore, and J. Milan (June 22): The tobacco splitworm has evidenced itself in one small infestation near Clarksville in the last few days.

HORLWORMS (Protoparce spp.)

F. S. Chamberlin (June 22): Emergence of P. sexta Johan. has been retarded by extremely dry weather, in Gadsden County. Infestations in May and June were less than normal.

A. C. Morgan, J. U. Gilmore, and J. Milan (June 22): The moths of P. sexta and P. quinqueangulata Haw. are more numerous than usual at this season, at Clarksville.

CORN ROOT WEBWORM (Crambus caliginosellus Clem.)

C. R. Willey (June 19): Specimens were received today from Holston with a statement that tobacco growers in that section are having serious trouble with a "worm that is new". Specimens have been received this spring that were damaging corn. This pest is troublesome in southwestern Virginia nearly always when corn or tobacco is planted on spring-plowed fallow land.

S. Marcovitch (June 3): C. caliginosellus is reported attacking tobacco and corn in eastern Tennessee and damaging 20 to 40 per cent of the crop. The larvae appear to be more abundant and injurious than at any time in the past ten years.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

Z. P. Metcalf (May 30): The tobacco flea beetle is very abundant.

A. C. Morgan, J. U. Gilmore, and J. Milan (June 22): This insect is doing considerable damage to newly set tobacco at Clarksville.

TOBACCO THRIPS (Frankliniella fusca Hinds)

F. S. Chamberlin (June 20): Tobacco thrips are reported in Gadsden County attacking cigar wrapper tobacco crops.

# FOREST AND SHADE-TREE INSECTS

## PERIODICAL CICADA (Tibicina septendecim L.) Brood V

New York

E. P. Felt (June 23): The periodical cicada is extremely abundant near Riverhead, Long Island, a section on the north shore being described by Mr. George C. Pike as being alive with the insect. It is so numerous that the new growth, principally oak, is being destroyed by the ovipositing females. This confirms the report made by W. T. Davis in Bulletin No. 10 of the Brooklyn Entomological Society in 1903, page 79, and is apparently a comparatively unrecognized colony extending in a band about 12 miles long from Fresh Pond to within 3 miles of Riverhead and extending inland from the Sound to the middle of the Island.

## CANKER WORMS (Geometridae)

North Dakota

J. A. Munro (June 17): Cankerworms have defoliated large areas of basswood and other trees, particularly along the Red River Valley portion of the State. Several reports have been received of injury to apple trees.

Minnesota

A. G. Ruggles (June 22): Fall cankerworm (Alsophila pometaria Harr.) and the spring canker worm (Paleacrita vernata Peck) are more abundant than usual this year from Minneapolis 20 miles westward.

Iowa

C. J. Drake (June 27): The spring canker worm has been extremely abundant in the vicinities of Traer, Toledo, and Marshalltown. Many trees have been totally defoliated by the feeding of the caterpillars. In one of the State parks near Toledo it is impossible for the people to use the park because of the enormous number of canker worms present.

Nebraska

M. H. Swenk (May 15 to June 15): Some orchards in southeastern Nebraska were damaged during May by the spring cankerworm, which also attacked elms more or less as far to the northwest as Custer County.

Kansas

H. R. Bryson (June 22): Dr. E. G. Kelly reported that the spring canker worm was a serious problem from Clay Center to the western part of the State. These larvae were the most injurious in Lincoln, Ottawa, Cloud, Saline, and Clay Counties, defoliating the trees along the rivers and small tributaries. This insect was also reported as injuring elm trees at Belvidere and defoliating apple trees at Chanute, June 5.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

H. B. Pierson (June 23): Severe defoliation has been caused by the tent caterpillar in Hancock County.

W. J. Schoene (June 23): The tent caterpillars in orchards and forests have attracted a great deal of attention during the past spring throughout the central part of the State. The moths were present from June 10 to 20 and during this period were so numerous in the cities of Lynchburg and Roanoke that some of the merchants turned out their lights and closed the doors.

H. T. Fernald (May 6 - 10): The forest tent caterpillar moth was very abundant at lights.

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

D. B. Whelan (May 15 - June 15): The eggs of the white-marked tussock moth began hatching at Lincoln on June 10.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

E. W. Mendenhall (June 28): Bagworms are making their appearance on sycamore trees in Columbus. They are just starting, for the larvae with bags attached are very small. June 26, young bagworms were very bad on locust trees planted along the street and private property in Xenia, Greene County.

BARK BEETLES (Dendroctonus spp.)

R. D. Glasgow (June 22): I was impressed with the unusual number of pine, hemlock, and spruce trees which apparently were recently dead from borer injury and which still retained the reddened foliage. Large numbers of trees also showed from one to many branches with reddened foliage, indicating borer work. An increased amount of borer injury is to be expected following the past two seasons of unusually dry weather.

EUROPEAN FRUIT LECANIUM (Eulecanium corni Bouché)

H. L. Bailey (June 20): An unusual outbreak of Lecanium scale has occurred at Montpelier. Twigs and small branches of elm, ash, silver maple and some other trees and shrubs bear great numbers of the scale. Eggs unhatched. Lighter infestations were noted in nearby towns.



ASH

GALL MITES (Eriophyes spp.)

Massachusetts E. P. Felt (June 23): The ash leaf gall mite (Eriophyes sp.) becomes exceedingly abundant on individual trees and has been reported from Pittsfield.

Nebraska M. H. Swenk (May 15 - June 15): A report of heavy infestation of ash trees by the ash flower gall E. fraxiniflora Felt was received from Polk County during the last half of May.

BANDED ASH BORER (Neoclytus caprea Say)

Nebraska M. H. Swenk (May 15 - June 15): The banded ash borer has been complained of as attacking ash trees at Omaha.

CARPENTER WORM (Prionoxystus robiniae Peck)

North Dakota J. A. Munro (June 17): A specimen of the carpenter moth, taken from ash, was received by this office. Adults of this species began to appear at Fargo on June 7, and are very abundant on ash.

A SAWFLY (Tomostethus bardus Say)

Kansas H. R. Bryson (June 22): Dr. R. L. Parker reports the ash sawfly present in Manhattan this spring. Large numbers of these occurred in 1930 during the early part of May. This insect was last reported in Manhattan by Fred Marlatt in 189

BIRCH

BRONZE BIRCH BORER (Agrilus anxius Gory)

Nebraska M. H. Swenk (May 15 - June 15): A resident of Omaha reported the loss of a birch tree by borers that were identified for him as the bronze birch borer. This identification was not confirmed by us, but if it is correct, it indicates the first loss of birch trees because of that pest that has come to our attention in this State.

AN APHID (Hemamelistes spinosus Shimer)

Connecticut W. E. Britton (June 4 - 11): This insect is apparently more abundant than usual on gray birch at New Milford and North Haven.

BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fall.)

New England

Monthly Letter, Bureau of Entomology, No. 205, (May): A small colony of a eulophid, which is apparently a species of Chrysocharis, was liberated in Strong, Me., on May 27. This hymenopterous parasite issued from material of P. nemorata received at the gipsy-moth laboratory from Austria last winter. Phyllotoma nemorata is a leaf-mining sawfly on birch. It appeared in epidemic form in Maine in 1927 and has since been noted in New Hampshire, Vermont, and Massachusetts.

New York

R. D. Glasgow (June 22): The white-birch leaf-mining sawfly has begun to emerge in Essex County.

BIRCH CASE BEARER (Coleophora salmani Hein.)

Maine

H. B. Pierson (June 23): Heavy defoliation is reported at Mt. Desert Island and near by towns on the mainland.

BOXELDER

LEAF ROLLERS (Cacoecia spp.)

Colorado

C. P. Gillette (June 26): C. semifera is very abundant at Greeley, stripping boxelder trees.

Utah

G. F. Knowlton (June 22): The boxelder leaf rollers, C. semifera Walk. and C. negundana Dyar, are defoliating boxelder trees in one area at Centerville. Moths are very abundant at the present time.

CEDAR

A TORTRICID (Tortrix cockerella Kearf.)

Nebraska

M. H. Swenk (May 15 - June 15): Additional infestations of cedar trees with the caterpillar Clepsis cockerella were reported from Frontier and Red Willow Counties during the first half of June.

A WEEVIL (Pissodes nemorensis Germ.)

Mississippi

R. W. Harned (June 19): Two specimens were collected on Cedrus deodara at Ocean Springs on May 28. Determination by L. L. Buchanan.

ELM

A POCKET GALL (Eriophyes ulmi Garn.)

Nebraska

M. H. Swenk (May 15-June 15): Heavy infestations of elm leaves with the elm pocket gall, Eriophyes ulmi were received from Buffalo County during the last half of May.

ELM COCKSCOMB GALL (Colopha ulmicola Fitch)

Vermont

H. L. Bailey (June 23): A very heavy infestation of the cockscomb elm gall is reported from Richford. More than the usual numbers noted elsewhere.

ELM LEAF MINER (Kaliopfenusa ulmi Sund.)

New York

W. E. Blauvelt (June): Specimens of infested elm leaves were received from Warsaw, May 29, Parish on June 3, from East Aurora, June 8, and from Sodus on June 10.

MOURNING-CLOAK BUTTERFLY (Aglais antiopa L.)

Ohio

E. W. Mendenhall (June 18): The spiny elm caterpillar is quite bad on the elm stock in the nurseries in Lake County.

Indiana

J. J. Davis (June 24): The spring elm caterpillar partially defoliated elms at Columbia City and Lafayette June 13. It was also common on willow at Rensselaer June 12.

ELM FLEA BEETLE (Haltica ulmi Woods)

Rhode Island

A. E. Stene (June 24): I found the elm flea beetle in Narragansett Pier in one place and also found a few beetles near Kingston, although they did not seem to be anywhere as near abundant there. Previously I have found them about 5 miles west of Narragansett Pier in what is the southern part of South Kingstown. They have also been reported from the southern part of the city of Cranston. They may have been present in other parts of the State but we have not had a chance to check up on it carefully enough to make definite records.

ELM LEAF BEETLE (Galerucella xanthomelaena Schrank)

New England

E. P. Felt (June 23): Eggs and small grubs occur in southern New England. The insect is somewhat later than usual. The trees have developed a very abundant foliage, and this may result in reduced injury as compared with last year.

Rhode Island

Providence Journal (June 9): This insect pest is known as the most important leaf-eating enemy of the elm, and it is prevalent in Rhode Island in great numbers this year because the long drought of 1930 enabled it to survive the winter cold more easily than usual.



- West Virginia L. M. Peairs (June 23): The elm leaf beetle was very destructive near the city of Wheeling. (Identification based on work; no beetles or larvae found when examination was made.
- Oregon Oreg. Agr. Coll., Insect Pest Report (May): The elm beetle is very abundant at Jackson. Young larvae hatching throughout county. Also noted at Lexington, Morrow County.

EUROPEAN ELM SCALE (Gossyparia spuria Modcer)

- West Virginia L. M. Peairs (June 23): The European elm scale is injurious at Oglesby Park.
- Ohio T. H. Parks (June 24): This insect is now very abundant on elm trees in Columbus. Reports come in of its presence on elms in other cities. We received more inquiries about the control of this insect than for any other pest during June. It is more serious than for years.
- Vermont H. L. Dailey (June 23): The elm bark louse has been found in considerable quantity in Montpelier and vicinity.
- Indiana J. J. Davis (June 24): The European elm scale is reported as abundant on elm at Aurora June 10.

HICKORY

PECAN CIGAR CASE BEARER (Coleophora caryaefoliella Clem.)

- New York E. P. Felt (June 23): The hickory leaf case bearer (Coleophora caryaefoliella Clem.) is generally abundant and locally injurious to hickories on Long Island.

PHYLLOXERA (Phylloxera spp.)

- Connecticut E. P. Felt (June 23): P. caryae-venae Fitch was found sufficiently abundant on hickory near Danbury to cause a somewhat marked foliage deformation.
- New York E. P. Felt (June 23): Hickory leaf stem galls P. caryae-caulis Fitch have been reported as somewhat abundant on trees at Bay Shore, Long Island.
- W. E. Blauvelt (June 15): Hickory twigs which were infested with P. caryae-venae were received from Marcellus.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

- Maine A. E. Brower (June 9): Maine is experiencing a severe outbreak of the larch case bearer.
- Vermont H. L. Dailey (June 22): Damage by the larch case bearer continued to increase through the early part of the month. Adults were found to have emerged and eggs were found at Berlin.
- Massachusetts A. I. Dourne (June 26): The larch case bearer is apparently more abundant than normally. Many complaints and samples showing severe injury have been received from all parts of the State. This species apparently has found conditions very favorable for an unusual increase in numbers this season.
- New York R. D. Glasgow (June 22): I left Albany Sunday evening, June 14, and made a three-day circuit through northern New York via Lake George, Schroon Lake, St. Hubert's, Upper Jay, Lake Placid, Tupper Lake, and Piercefild to Cranberry Lake, returning via Long Lake, Blue Mountain Lake, Indian Lake, and Speculator. I found the larch to be severely injured by the larch case bearer throughout this entire circuit except that there appeared to be an area just north of Schroon lake where the larch was uninjured.
- Pennsylvania J. N. Knull (June 24): Native larch, five miles west of Milford, Pike County, is infested with the larch case bearer. The needles on many trees are partly brown. Many large trees have died in this locality. This may be due to the feeding of this insect together with the late spring frost.

MAPLE

MAPLE NEPTICULA (Nepticula sericopeza Zell.)

- New England E. P. Felt (June 23): The maple nepticula very generally infests fallen maple seeds in southeastern New England, and to a limited extent the larvae may be found working in the petioles of leaves. This latter is more likely to occur on trees which are not producing fruit.
- MAPLE LEAF STEM BORER (Priophorus acericaulis MacG.)
- Connecticut W. E. Britton (June 22): Apparently more abundant on sugar maple in Middletown, Watertown, Hamden, and Glastonbury than in most seasons. It has not been seen for several years until this summer.

W. T. Harris (June 8): Maple trees at Glastonbury are being damaged by this insect, which causes the leaves to drop.

New Jersey

E. P. Felt (June 23): The maple leaf stem borer is reported as being somewhat injurious to sugar maple at Orange.

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

Mississippi

R. W. Harned and assistants (June): Specimens of this insect collected from maple were received on May 25 from Meridian, on May 27 from Jackson, on June 1 from DeKalb, and on June 18 from Dooneville. Alder in the southern part of the State is heavily infested.

OCELLATE MAPLE GALL (Cecidomyia ocellaris O. S.)

Pennsylvania

E. P. Felt (June 23): The ocellate maple gall is sufficiently numerous in the Philadelphia area to attract notice on account of foliage disfiguration, on maple.

Ohio

E. W. Mendenhall (June 17): I find some maple leaf galls on the maple leaves in some of the nurseries in Lake County.

MAPLE BLADDER GALL (Phyllocoptes quadrines Shin.)

Massachusetts

E. P. Felt (June 23): Maple bladder galls were reported as very abundant upon soft maple at Pittsfield.

Connecticut

W. E. Britton (June 22): This insect has been reported as attacking silver maple at Bloomfield and Putnam in normal abundance.

NORWAY MAPLE APHID (Chaitophorus lyropictus Kess.)

General

E. P. Felt (June 23): The Norway maple aphid is somewhat to considerably abundant on Norway maples in southern New England and eastern New York, and has been reported from northern New Jersey.

Pennsylvania

C. A. Thomas (June 23): The Norway maple aphid is now abundant on Norway maples in southeastern Pennsylvania, but so far the leaf-drop has been light. Coccinelids are common, feeding on them.

Ohio

E. W. Mendenhall (June 5): The Norway maple trees planted on streets and private properties in Fiqua are badly infested with Norway maple aphids.



COTTONY MAPLE SCALE (Fulvinarina vitis L.)

- Vermont H. L. Bailey (June 23): The cottony maple scale is moderately abundant in a large part of the State.
- Ohio T. H. Farks (June 20): This scale is now quite abundant on soft maple trees and many calls are received about its control. The insect is worst in counties along the Indiana line. On some trees the limbs are white with this scale.
- E. W. Mendenhall (June 17): The cottony maple scale is found generally on maples (soft) and oriental plane trees, in the nurseries in Lake County. (June 26): The cottony maple scale is very bad on the soft maple along the streets and private plantings in Springfield. The limbs of the trees are just white with the cottony maple scale, and no doubt it will do great damage to the trees.
- Indiana J. J. Davis (June 24): The cottony maple scale is reported abundant at Kokomo, June 4, and at Gary, June 10. It was observed to be common at West Lafayette.
- Alabama J. M. Robinson (June 20): The cottony maple scale is moderately abundant over the State.

OAK

JUMPING BULLET GALL (Neuroterus saltatorius Hy. Edw.)

- Indiana J. J. Davis (June 24): The "flea seed" cynipid gall (N. saltatorius var. saltatorius) was reported as abundant on oak at Princeton and Patoka June 19 and 20. It was probably doing no damage but was conspicuous because of the characteristic "jumping" galls.

A SCALE INSECT (Kermes pubescens Bogue)

- Indiana J. J. Davis (June 24): An oak kermes is destructively abundant at West Lafayette. (Det. by H. Morrison, June 26)

PINE

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

- Connecticut R. B. Friend (June 23): An inspection of the red pine plantations around New Haven shows a general light infestation to be present.
- Pennsylvania T. L. Guyton (June 1): A species of pine tip moth was found on Pinus montana and P. rubra in Wilkes-Barre.

G. Sleesman (June 15): The European pine shoot moth was collected from Austrian pine, red pine, and Scotch pine in nurseries at Spring Mills and Morrisville. Specimens were also collected from Scotch pine at Quakertown, on June 17.

A PINE SHOOT MOTH (Eucosma sp.)

E. F. Felt (June 23): The pine shoot moth, a new species of Eucosma, was somewhat generally abundant last year in the lateral shoots of white pine at North Stanford and has been reported from other Connecticut localities. It is sufficiently numerous in some places as to cause an appreciable amount of injury.

WOOLLY PINE SCALE (Pseudophilippia quaintancii Ckll.)

E. W. Mendenhall (May 26): The wooly pine scale is quite bad on the Scotch pines in Lake County, and is especially abundant at Tainesville.

PITCH TWIG MOTH (Petrova constockiana Fernald)

J. N. Knull (June 2): District forester W. S. Swigler reports considerable damage to Scotch and red pine plantations in the vicinity of Shamokin.

SPITTLE BUGS (Cercopidae)

J. N. Knull (June 11): Spittle bug nymphs have been especially abundant on Scotch pine, Virginia scrub pine, red pine, pitch pine, shortleaf pine, and white pine in various parts of Pennsylvania this year. The Scotch pines show the greatest numbers and the pitch pines next. Nymphs were observed on pines in Franklin, Adams, York, Perry, Center, Huntington, and Cumberland Counties.

WESTERN PINE BEETLE (Dendroctonus brevicornis Lec.)

Monthly Letter, Bureau of Entomology, No. 205, (May): It was found that the western pine beetle, which had been in an endemic status for the past four years, suddenly increased during the season of 1930, and that large groups of trees within these plots of the Sierra National Forest have been attacked. As the winter of 1930-31 has been one of the driest on record, these plots will afford an excellent opportunity to study the effect of moisture deficiency on an increasing infestation of the western pine beetle.

POPLAR

A LEAF ROLLER (Cacoecia conflictana Walk.)

Maine

H. B. Feirson (June 23): Severe outbreaks reported in Lowelltown and Kokadjo.

SPRUCE

SPRUCE GALL APHID (Adelges abietis L.)

Vermont

H. L. Bailey (June 23): The spruce gall aphid is noted as very abundant throughout Washington County. Galls were well started June 4.

SPRUCE BUD SCALE (Physokermes piceae Schr.)

New York

E. F. Felt (June 23): The spruce bud scale was reported as occurring somewhat abundantly on spruce at Westbury, L. I.

SPRUCE MITE (Paratetranychus uniunguis Jacobi)

Northeastern  
States

E. P. Felt (June 23): The spruce mite was generally prevalent last year in the Northeastern States, and many specimens indicating severe infestations have been received from Philadelphia, Pa., north to Boston, Mass. A period of dry weather is very likely to be characterized by serious injury from this pest.

SPRUCE BUDWORM (Harmoloba fumiferana Clem.)

North Dakota

J. A. Munro (June 17): Only a slight amount of spruce budworm injury has been reported this season. The first adult of this insect were captured at Fargo today.

A NEEDLE MINER (Hemimene albolineana Keuff.)

Ohio

E. W. Mendenhall (June 23): The needle miner of the blue spruce is found quite generally in Ohio. Reported abundant

Nebraska

M. H. Swenk (April 15 - May 15): During the past fall, winter, and spring, a number of serious infestations of blue spruce with a needle miner were discovered in Lincoln. During the second week in May similar infestations were found in Norfolk. The exact species has not been determined, but is suspected to be Hemimene albolineana. It will be given careful study during the coming summer.



TAMARIX

TAMARISK SCALE (Chionaspis etrusca Leon.)

Arizona C. D. Lebert (June 25): The tamarix scale (C. etrusca Leon.) is again becoming prevalent in the Phoenix area on tamarix trees, the young trees suffering the most from the infestations. The lady beetle Chilocorus cacti L. is rapidly becoming established, however, and is feeding on the pest.

INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

CLEFT-HORNED PRIONUS (Prionus fissicornis Hald.)

Nebraska M. H. Swenk (May 15 - June 15): At Sidney, Cheyenne County, during the third week in May, lawns were infested and injured by larvae.

A CERCEPID (Monocphora bicincta Say)

Florida J. R. Watson (June 22): The cercepid M. bicincta was doing considerable damage to St. Augustine grass lawns in Deland.

FOUR-LINED PLANT BUG (Loecilocapsus lineatus Fab.)

Massachusetts A. I. Bourne (June 26): We have received many complaints and have personally noted considerable injury by both the tarnished plant bug Lygus pratensis L. and the four-lined plant bug Loecilocapsus lineatus, especially on various species of perennials in ornamental plantings. Indications are that the four-lined plant bug at least is considerably more abundant this season than normally.

Ohio E. W. Mendenhall (June 18): The hardy chrysanthemums are badly infested with the chrysanthemum plant bug on a private planting in Painesville, Lake County.

COMMON RED SPIDER (Tetranychus telarius L.)

Mississippi R. W. Harned (June 19): Many complaints in regard to red spiders, accompanied by specimens of infested plants, have been received from all sections of Mississippi during the past month. Most of these complaints have been in regard to injury caused to ornamental plants of various kinds.

DELPHINIUM

CYCLAMEN MITE (Tarsonemus pallidus Banks)

New York

W. E. Blauvelt (June 3): Delphiniums are seriously infested.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Virginia

G. E. Gould (June 24): Practically every euonymus bush in Norfolk and vicinity is severely infested with the euonymus scale. The young scales are nearly full grown and have caused over half of the leaves to fall from many bushes.

Mississippi

R. W. Harned and assistants (June): The euonymus scale is continuing to injure Euonymus japonica plantings in McComb and injury is severe on plantings in Greenville.

GERANIUMS

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

Ohio

E. W. Mendenhall (June 26): Fuller's rose beetle is very bad in one of the greenhouses in Springfield, where it is killing many of the geranium plants.

GLADIOLUS

TULIP AFHID (Anuraphis tulipae Boyer)

Connecticut

B. H. Walden (June 3): Several thousand gladiolus corms were injured in storage where the humidity had been too high for best storage conditions.

CABBAGE LOOPER (Autographa brassicae Riley)

Kansas

H. B. Hungerford (June 18): Beginning about the first of this month, the larvae of the cabbage looper began to work on young gladiolus plants, particularly those beds that had contained lamb's-quarters and other weeds. As soon as the weeds were hoed down the gladiolus suffered severely. We reared some of these caterpillars which we found injuring gladiolus plants all over southern Kansas.

IVY

IVY SCALE (Aspidiotus hederac Vall.)

Ohio E. W. Mendenhall (June 5): Ivy plants, especially the variegated, are badly infested in one of the greenhouses in Akron. I find that the variegated ivy is more susceptible to scale attack than any other.

LILY

A NOCTUID (Xanthopastis timais Cran.)

Mississippi R. W. Harned (June 15): Larvae were reported as moderately abundant on lilies at Moss Point.

FITTOSIORUM

MEALY FLATA (Ornensis pruinosa Say)

Mississippi R. W. Harned and assistants (June): This species of plant hopper has been numerous in Hancock and Harrison Counties on Pittosporum.

PRICKLY ASH

PRICKLY ASH BEETLE (Trirhabda brevicollis Lec.)

Mississippi R. W. Harned (June 19): Specimens were recently received from Pascagoula, with the report that they were defoliating prickly ash.

ROSE

OBLIQUE-BANDED LEAF ROLLER (Cacoecia rosaceana Harr.)

Illinois C. C. Cornton (June 13): The oblique-banded leaf roller is severely injuring roses and gardenias in a large rose plant at Des Plaines.

ROSE SAWFLY (Caliroa aethiops Fab.)

Nebraska M. H. Swenk (May 15 - June 15): During the second week in June there were many complaints of a heavy skeletonization of rose leaves by the rose slug C. aethiops.

ROSE CURCULIO (Rhynchites bicolor Fab.)

North Dakota J. A. Munro (June 13): The first report this season of rose curculio injury to roses was received June 13 from Valley City.



Nebraska

M. H. Swenk (May 15 - June 15): The rose curculio was reported destroying rose buds in Adams County during the second week in June.

SUMAC

SUMAC FLEA BEETLE (Blepharida rhois Forst.)

Mississippi

R. W. Harned (June 3-8): Specimens were received from Senatobia on June 3, and from Belmont on June 8, with the report that they were defoliating sumac.

YEW

STRAWBERRY ROOT WEEVILS (Brachyrhinus spp.)

Massachusetts

A. I. Dourne (June 26): There is evidently a considerable infestation in nurseries, particularly on different varieties of Taxus by B. sulcatus Say. Prof. Whitcomb, who has had the opportunity of personally visiting several of the nurseries, reports that while Taxus is most commonly attacked, other nursery evergreens and some perennials are infested. Adults emerged about June 17 and at the present time are very abundant. Reports of similar abundance of this species have been received from Rhode Island and New Hampshire as well as in eastern Massachusetts.

Connecticut

W. E. Britton (June 24): This insect (Brachyrhinus sulcatus Fab.) was reported as having destroyed 90 per cent of the Taxus plants in two blocks in a nursery, and scattered plants are injured throughout the nursery in Pomfret.

Minnesota

A. G. Ruggles (June 22): Strawberry root weevils (probably B. ovatus) have been found fairly well distributed in the southeastern part of the State. Young evergreens are suffering severe injury over large areas at Newport and Owatonna.

EUROPEAN FRUIT LECANIUM (Lecanium corni Douche)

Ohio

E. W. Mendenhall (May 26): Taxus cuttings in a greenhouse in Fainesville are infested.

VERBENA

CHRYSANTHEMUM LEAF MINER (Agropyza chrysanthemi Kowarz)

Mississippi

R. W. Harned (June 3-4): Serious injury to verbena plants by this insect was reported from Cleveland, June 3, and from Waynesboro, June 4.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

EYE GNATS (Hippelates spp.)

Mississippi

H. Dietrich (June 10): A gnat, H. pusio Mall., was first noticed at Lucedale on June 10 and has since become extremely annoying.

California

D. C. Farman (May): The catches of H. flavipes Loew in the weekly status traps indicate that over the Coachella Valley as a whole there have been more Hippelates during May, 1931, than in May, 1930; 245,190 this year, and 204,661 in the same traps last year. It is estimated that from 50 to 100 per cent more Hippelates have bred in the Valley this year than last.

CATTLE

HORN FLY (Haematobia irritans L.)

Missouri

L. Haseman (June 22): The horn fly has been unusually abundant on cattle this month and seems to be on the increase.

SCREW WORM (Cochliomyia macellaria Fab.)

Texas

R. A. Roberts (May): Numerous screw worm cases were reported, both goats and cattle having been attacked. Cases were present in soremouth kids and older goats were affected at head injuries. Some cases were found of C. macellaria attacking new-born calves at the navel. Screw-worm cases are about normal for this time of year, and in view of favorable weather conditions are not so bad as could be expected.

HORSE

HORSE BOTFLIES (Gastrophilus spp.)

North Dakota

J. A. Munro and assistants (June): Horse botflies are very abundant in Burke County, June 6; moderately abundant in Morton County, June 11; and scarce in Ramsey County, June 13.

## HOUSEHOLD AND STORED-PRODUCT

## INSECTS

TERMITES (Reticulitermes, spp.)

- Indiana J. J. Davis (June 24): The usual numerous reports of termites were received during the past month.
- Illinois W. T. Flint (June): Many reports of white-ant swarms in houses have been received during the past month.
- Nebraska M. H. Swenk (May 15 - June 15): Infestations of buildings with termites, R. tibialis Emk., were reported from Gage County and from Clay during the period here covered. In the former case a house and in the latter a wooden granary were infested.

ANTS (Formicidae)

- Illinois C. C. Compton (May 27): Ants, Tapinoma sessile Say, are very abundant and annoying in the business district of Syracuse. Although they are most troublesome in grocery and fruit stores practically every business establishment in Syracuse is infested.
- Nebraska M. H. Swenk (May 15 - June 15): There were many complaints of trouble with ants of various kinds during the period covered. These included carpenter ants, Camponotus herculeanus pennsylvanicus DeG., working in trees in eastern Nebraska, the large red ant Formica rufa L., forming nests in yards in northeastern Nebraska, the mound-building ant, Pogonomyrmex occidentalis Cress., doing the same thing in western Nebraska, and the usual house and lawn ants proving injurious in houses and flower gardens.

GOLDEN POLISTES (Polistes aurifer Sauss.)

- Arizona C. D. Lebert (June 24): Numerous complaints have been received regarding nesting P. aurifer in eaves and roofs of houses, where they greatly annoy the occupants.

A PTINID (Xyletinus peltatus Harr.)

- Mississippi H. Dietrich (June 22): A ptinid beetle, X. peltatus, is extremely abundant in the pine beams, floor, and walls of a house at New Augusta. This house had been rebuilt and stood to the ground five years ago. The timbers having blue stain had many more exit holes than sound timbers. Needless to add, termites also had made a good start.



PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from "News Letter", June, 1931.

(Not for publication)

MEXICAN FRUIT WORM (Anastrepha ludens Loew)

The outstanding development on the Mexican fruit worm project during the month of April was the finding of infestations in locally grown fruit in Matamoros and in fruit produced in a grove near Mission, Tex.

The Matamoros infestation was discovered April 9, in sour oranges produced in the patio of a house at 9th and Herrera Streets. The fruit produced on these premises was heavily infested during the season 1929-30. Although traps have been maintained in these trees continuously since October, 1929, no adults have been caught since August 20, 1930. Upon finding this infestation a thorough examination was made of all fruit growing in Matamoros. This inspection showed no indication of other infestations. However, on the 15th and 16th adults were caught in traps located at a distance of 11 and 5 blocks, respectively, from the infested premises at 8th and Herrera Streets, one adult being captured in each of the two traps. Immediately upon the determination of the infestation and in cooperation with the Mexican inspector at Matamoros, the work of stripping all citrus fruits from the trees was started. Very little opposition to this work on the part of the citizens of Matamoros has been encountered.

On April 22, a report was received of the finding of three maggots in a grapefruit from a grove northeast of Mission. Upon checking the grove from which the fruit originated some two or three bushels of fruit were found stored in a box filled with sand. An inspection of this fruit resulted in the finding of one larva, and on screening the sand in which the fruit had been stored, five pupae were found. This fruit and the sand in which it had been stored were immediately treated and buried, as were some nine boxes which were being held in storage within about one-half mile of the point of infestation. A thorough examination of all other fruit held in storage in the valley showed no indications of further infestations.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

In order to determine the activity of the pink boll worm in the Salt River Valley, Ariz., two light traps and two flight screens were used, but no moths have been taken. The inspection of cotton squares, however, yielded 5 larvae of the pink boll worm on May 5. The field where the specimens were taken was rather heavily infested last year, and the infested squares were from stub cotton. Preparations are now being made to destroy the cotton in that field. Three additional worms were found in an adjoining section on May 6. These findings are the first in that area in the 1931 crop of cotton.

On April 17 the United States Customs Examiner in Philadelphia called the attention of our inspectors to a case containing antiques from Syria packed in raw cotton. The cotton was removed and excelsior substituted; half the 36.5 pounds of cotton was examined and all seeds removed from it, the whole lot being then destroyed by burning. Dead larvae were found in 18 of 100 seeds, and in the nineteenth a living larva was found. The remainder of the seed was forwarded as an interception to Washington. Reports on both the larvae found and the seed submitted now verify the presence of the insect in both cases. This case is of special interest, not only because it is a first record of the finding of live larvae of this insect at the port of Philadelphia, but also because of the unusual attendant circumstances. The case of antiques would normally have little interest for our inspectors and we are indebted to the Customs officials for bringing the matter to our attention. It may be added that this helpfulness on their part clearly implies a very encouraging degree of understanding and cooperation between the two inspection forces in this port.

#### GIPSY MOTH (Porthetria dispar L.)

Infestations have been found in four towns in Connecticut and in three towns in Massachusetts. The most serious infestations in the Barrier Zone have been found in the towns of New Marlboro, Sandisfield, and Sheffield, Mass., and in the towns of Canaan and Salisbury, Conn.

During April, nine crews scouted in four towns, and two infestations were found in the town of Milan, but as the work in this town has not been completed, the size of these infestations is not known.

#### JAPANESE BEETLE (Popillia japonica Newm.)

Four thousand three hundred and sixteen Japanese beetles were collected in and near 500 traps placed in Cape Charles, Va., between May 20 and August 30, 1930. The infestations are comparatively light, but fairly continuous throughout the town. A representative of the Moorestown Japanese beetle research laboratory spent several days in Cape Charles while the treating operations were in process, but failed after repeated diggings to locate any larvae whatever in the treated area.



INSECT CONDITIONS IN PORTO RICO DURING MAY, 1931.

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico.

Infestation counts of a sugarcane scale (Aspidiotus sacchari Ckll.) obtained from examining 100 cut pieces of cane each in four parts of a small experimental planting of RH 10-12 at Naguabo on May 9-10 showed an average of 11.25 per cent infestation. Some pieces had several nodes quite thickly encrusted. Many scales had been killed by a black fungus. (M.D.L.)

Adults of a scarabaeid beetle (Dyscinetus barbatus Fab.) known to attack sugarcane were first noted in abundance at lights at Isabela on April 20 and became very abundant for a few weeks. On the night of May 17 only a few were present and a few nights later none was observed. (M.D.L.)

The changa (Scapteriscus vicinus Scudd.) did about the usual amount of damage, approximately 15 per cent, to young tobacco plants in the field throughout November and early December, 1930, in the Juncos-Las Piedras section. This insect destroyed about 50 per cent of the young plants on a 1-acre planting of rice, the damage starting in April and continuing up to May 8. About 3 acres of rice planted in the same place in early April, 1930, were entirely destroyed by early in July of that year. (J. Gomez, Agricultural Agent at Humacao.)

Climbing cutworms were more injurious to tobacco than usual, about 20 per cent of the young plants having been killed in the Juncos-Las Piedras section during November and December, 1930. (J.G.)

The melon worm (Diaphania hyalinata L.) was found heavily infesting the foliage of melon and cantaloupe in a field near Aguadilla about the middle of May. (M.D.L.)

The lima bean pod borer (Maruca testulalis Geyer) was absent in the last count of 100 lima bean pods, although earlier in the month it had been present. (G. N. Wolcott.)

A pod borer (Etiella zinckenella Treit.) infested about 12 to 15 per cent of the lima bean pods during the month, but the last examination of 100 pods on May 23 showed no infestation at the Isabela Substation experimental plots. (G.N.W.)

The scarabee (Euscepes batatae Waterh.) was found to be badly infesting several sweetpotato tubers received by Samuel Molinary at Carolina on May 18 for use as seed from the Federal Experiment Station at Mayaguez. Both adults and larvae were abundant in the tubers. (M.D.L.)



The sweetpotato leaf miner (Acromyza ipomeae Frost) was observed moderately infesting two small plantings of sweetpotato at Humacao Playa on May 10. A few sweeps of the net showed the flies to be common in the plantings. (M.D.L.)

A leafhopper (Empoasca sp.) was causing slight but general stippling of the leaves on two small plantings of sweetpotato at Humacao Playa on May 10; all stages of the insects were present on the undersides of the leaves.

Examined on May 5, at the Isabela Substation, an experimental planting of about one-half acre of alfalfa which was nearly ready to cut and found it generally infested with a leaf-tier (Dichomeris piperatus Wlsm.), many of the larvae being tied together and badly eaten. Damage as a whole was only moderate, however. (M.D.L.)

The bean lacebug (Corythucha gossypii Fab.) was found to be moderately abundant on several young grapefruit trees on the Isabela Substation ground on May 5. The yellow stippling of some of the leaves involved almost their entire surface. We did not notice any other host plants of this lacebug near by. Mr. Wolcott stated that he had first noticed the infestation about a week earlier. This is the first record of the insect affecting citrus in Porto Rico. On May 8 a number of leaves on several <sup>small</sup> grapefruit trees at the Insular Experiment Station at Rio Piedras showed characteristic yellowing, but very few of the lacebugs could be found on them. These trees were growing under several large Anona muricata trees which were moderately infested at the time. (M.D.L.)

Considerable damage by June beetles (Phyllophaga spp.) to the foliage of young grapefruits in two demonstration plantings of about 1 acre each was reported during early May (J.G.).

A scale (Pseudoparlatoria ostreata Ckll.) was observed as abundant on several good-sized papaya trees at the Isabela Substation and almost entirely encrusting some of the trunks and branches and several of the fruits. This scale was observed to be common <sup>on</sup> papaya at Ponce and several other localities on the south coast in September, 1930, but was not identified at the time. It has been specifically recorded from Porto Rico previously only from Mayaguez by Van Zwaluwenburg on Solanum seaforthianum and Acalypha sp. (M.D.L.)

Caterpillars of the cotton leaf worm (Alabama argillacea Hbn.) became abundant on cotton around Isabela about May 21 and most farmers are spraying or dusting. None had been noted around Aguadilla up to May 29. (G.N.W.) E. F. Rorke of the San Juan Ginnery Company reports that infestations on cotton started during May in several sections on the north coast, but that these were promptly checked by the use of insecticides. (M.D.L.) A few moths were noted at light near Aguadilla

on June 5, 8, and 9. These are in no sense migratory records, because of the small number of individuals noted in each case. (G.N.W.)

Examination of cotton fields around Carolina and Rio Grande, both in the hills and along the coast, indicated infestations of the pink boll worm (Pectinophora gossypiella Saund.) of from 75 to 100 per cent on May 12. Cotton fields around Maunabo on May 13 were so heavily infested that two had to be abandoned and a third was in such bad shape that little cotton would be obtained from a second picking. Cotton fields around Patillas and Guyama on May 13 were from 80 per cent to 100 per cent infested in most cases, although a few small fields had infestations as low as 25 to 30 per cent. The average for this district was around 90 per cent. (G.N.W.) Two infestation counts on a field of cotton in Camuy based on examination of 100 bolls each showed, on May 1, 6 per cent infestation and on May 8, 10 per cent infestation. By the end of the month there was a general light infestation over practically the whole of the north coast cotton-growing section at Camuy, Hatillo, and Arecibo. (E.F.R.)

The cotton blister mite (Eriophyes gossypii Bks.) was very abundant in several fields of cotton at Maunabo examined on May 13. It was even causing the stems and petioles to be flattened and deformed. (G.N.W.)

On May 5 a request was received from Ponce for control measures for June beetles (Phyllophaga spp.), the statement being made that the beetles had been damaging the roots of several rose bushes by burrowing into the soil at the base of the plants for purpose of egg-laying.





THE INSECT PEST SURVEY  
BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

August 1, 1931.

Number 6

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING



# INSECT PEST SURVEY BULLETIN

Vol. 11

August 1, 1931

No. 6

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR JULY, 1931

The paramount feature of the month is the devastating grasshopper outbreak in the Great Plains which is said to be the most serious of any since the early settlers were demoralized by the invasion of the Rocky Mountain locust in the decade between 1868 and 1880. Serious grasshopper outbreaks were quite generally reported from New York westward to Idaho, Nevada, and Arizona, and southward to Arkansas, Oklahoma, and Texas.

The severe outbreak of the variegated cutworm which was reported during June in the West-Central States was followed in July by a similar outbreak of this same insect in the North-Central States.

Late sweet corn on over one thousand acres of land in San Diego and Los Angeles Counties, Calif., was practically ruined by an undetermined climbing cutworm.

The fall armyworm appeared in destructive numbers in the Everglades of Florida and in the Mississippi delta of Louisiana during July. This is two months later than it appeared in destructive numbers in the Gulf Region last year.

The painted lady butterfly was quite generally reported from New England to the Dakotas, the larvae feeding on hollyhock and burdock.

The chinch bug seriously damaged corn in southern Illinois, central Missouri, and southern and central Kansas. It also did some damage to this crop in northern Ohio. This insect seems to be building up an abnormal population north of the normal chinch-bug belt in South Dakota and Iowa.

The corn ear worm was more numerous during July in the North-Central States than it has been for several years and in Nebraska is doing more damage during this July than any July in the past 30 years.

An interesting account of the variegated fritillary (Euptoieta claudia Lam.) doing commercial damage to beans, sweetpotatoes, and melons in Tennessee was reported in late June.

Correction: Outstanding Features, July 1 Bulletin, page 242, last paragraph under Mexican Fruit worm. Damage referred to was in April instead of June as might be inferred. See same number of the Bulletin page 315.



The establishment of a considerable colony of Bruchus brachialis Fahraeus attacking vetch in the field near Haddon Heights, N. J., and infested material from Delaware and Maryland was discovered during the month.

The peak of 1st-brood codling moth emergence in the Hudson River Valley occurred about July 7. The second-brood moths started to emerge in central Ohio about July 9, but up to July 20 no emergence had been observed in the fruit belt along Lake Erie. Severe infestations were reported quite generally in the eastern part of the United States. Band counts in western Illinois indicate that the population is 10 times as great as at the same time last year, and in eastern Illinois about 25 times as great.

Considerable damage is being done by the grape leafhopper from New Jersey westward to Ohio.

Blister beetles as usual are now attracting a great deal of attention on variety of crops in the East-Central and West-Central States, Say's blister beetle becoming quite numerous in New England and in New York.

The false chinch bugs are very numerous over a large area in Iowa and Nebraska. They are also numerous in parts of Texas, Colorado, and South Carolina.

Colorado potato beetle was discovered on a city lot in Ogden, Utah, during late June. By the end of July it appeared that this infestation had been eliminated.

The potato leafhopper with the associated hopperburn is prevalent in the East Central States, southward to Kentucky and westward to Iowa and Minnesota.

Larvae of the Mexican bean beetle were collected during the month in Washington County, Rhode Island. Considerable damage was done by the first generation of this insect in Connecticut. It was reported for the first time from Esopus and Port Ewen, New York. In the older infested region in the southern Middle Atlantic States but comparatively little damage is being done by this insect.

The squash bug is being reported much more frequently than last year from the Middle Atlantic States, southward to Georgia, Alabama, and Mississippi. It was also reported as doing serious damage in Iowa and Utah. In Idaho, where it was first discovered in 1929, it is now quite generally destructive over the southwestern part of the State.

A serious outbreak of the beet webworm is occurring in parts of Wyoming. The insect is also unusually abundant in Montana, and North Dakota. In Wyoming the insect seriously damaged beans into which they migrated from near-by fields.

The elm leaf beetle, reported as occurring in southern New England in the last number of the Insect Pest Survey Bulletin, was reported during July from New Hampshire southward along the Atlantic Coast to Maryland with occasional outbreaks in Ohio and Kentucky.

The spruce budworm is defoliating large areas of balsam fir and several species of pine in Wisconsin and parts of North Dakota. This insect was discovered for the first time in Cody Canyon, Wyo., in 1926, and since that time it has spread over a tremendous acreage and has destroyed large areas of Douglas fir.

About 43,000 acres of poplar has been defoliated in Maine by the poplar leaf roller, Cacoecia conflictana Walk.

Eye gnats have been very annoying along the South Atlantic Seaboard from Maryland to Georgia and around the Gulf to Mississippi.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR JULY, 1931

The severe outbreak of the pale western cutworm in Saskatchewan and eastern Alberta drew to a close late in June. In addition to this species, the red-backed cutworm occurred in injurious numbers over a wide area in Saskatchewan, particularly in park sections. It was widespread in Manitoba, notably in central and northern areas, and reports of its prevalence in Alberta were also received. Cutworm injury has been severe in many parts of British Columbia and damage by cutworms also has been reported from various sections of eastern Canada, although, except in southwestern Ontario, their attacks apparently were not particularly severe.

Moths of the army cutworm have been unusually abundant in the three Prairie Provinces, where they proved an annoying pest in and about houses.

In British Columbia, the Nicola and Okanagan valleys are largely free from grasshopper trouble, but a severe outbreak of the lesser migratory grasshopper in a section of the Fraser valley resulted in considerable loss to clover grown for seed. Damage due to grasshoppers, chiefly the clear-winged and lesser migratory grasshoppers, in Saskatchewan is widespread, particularly in south-central sections. Prevalent but localised outbreaks of the former species are occurring over a wide territory in Manitoba, notably in the southeastern part of the province. Grasshoppers continue on the upward trend in sections of Ontario and southern Quebec.

Important crop damage by wireworms of several species is occurring over a large area of Saskatchewan, and in east-central Alberta and southwestern Ontario.

Further reports from southern Quebec, southern Ontario, and southern Manitoba indicate that the Colorado potato beetle is definitely more abundant than usual in the above territories.

Heavy infestations of potato flea beetles are noted in the St. John River valley, New Brunswick, in southern Quebec, and in Ontario. Flea beetles are proving injurious to cruciferous crops in the Okanagan valley, British Columbia, and to sugar beets in Alberta.

The striped cucumber beetle is unusually numerous and destructive in the Annapolis valley, Nova Scotia, the St. John valley, New Brunswick, and in sections of southern Quebec and Ontario.

The cabbage maggot appears to be in outbreak form throughout southwestern Ontario and has done much damage to cruciferous crops. It is on the increase in the Lethbridge district, Alberta.

Evidence of a marked reduction in the European red mite infestation in the orchards of the Annapolis valley, Nova Scotia, is reported.

Throughout Manitoba, Saskatchewan, and Alberta the spider mite Paratetranychus uniunguis Jac. is attacking planted spruce and, in the Riding and Duck Mountains, is seriously infesting native white spruce. The pest is increasing in importance each year, its development being particularly favored by the prevailing dry weather.

A moderate outbreak of the spruce budworm has been noted in the Porcupine district, Ontario, and an extensive outbreak of the eastern spruce bark beetle has been reported on the north shore of the St. Lawrence River, Quebec, in the Manicouagan River region.

The aphid species Dreyfusia piceae Ratz. is infesting much of the balsam in the southern part of New Brunswick, especially near the Atlantic coast, between St. John and St. Stephen.



GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

lo T. H. Parks (July 21): Melanoplus atlanticus Riley, M. femur-rubrum DeG., and M. bivittatus Say are moderately to more abundant than usual in most parts of Ohio. (July 27): Grasshoppers are now quite common and calling for control measures in many places. County agents are prepared for poisoning campaigns and work is already started in a few western counties.

Illinois J. H. Bigger (July 20): Grasshoppers are attacking corn. They have destroyed 10 acres of soybeans in one field in Adams County.

ntucky W. A. Price (July 23): Grasshoppers are very abundant on corn, tobacco, alfalfa, blue grass, and vegetables in central Kentucky. Just now tobacco is receiving the greatest amount of injury.

sconsin C. L. Fluke (June 30): Grasshoppers, Camnula pellucida Scudd., moderately abundant in Door County.

nesota A. G. Ruggles and assistants (July): Several hundred thousand acres of crops have been destroyed in Kittson and Marshall Counties. The species involved is principally Melanoplus bivittatus Say, with Camnula pellucida Scudd. becoming more predominant farther north in the State. M. mexicanus Sauss. and M. femur-rubrum DeG. are also quite prevalent. Dissosteira carolina L. is quite prevalent in Norman County. (Abstract, J.A.H.)

rth Dakota J. A. Munro and assistants (July 17): A survey of Pembina County made lately showed that many fields of flax and small grain crops had been ruined by grasshoppers. Farmers, not only in this county but in many others, are actively engaged in applying poison bait to save their crops. Serious depredations also reported from Walsh, Golden Valley, Mountrail, La Moure, Kidder, Burke, and Ward Counties.

uth Dakota H. C. Severin (June 29): Grasshoppers are very abundant. This State is experiencing its worst grasshopper outbreak in its history this year. The worst infested areas include Brule, Buffalo, Charles Mix, Gregory, Mellette, Jones, and Lyman Counties. Considerable damage is also being done in Stanley, Hughes, Sully, Dewey, Marshall, Codington, Clay, Bon Homme, Butte, Pennington, Brookings, and Clay Counties. The predominant species is Melanoplus bivittatus Say with a sprinkling of M. mexicanus Sauss., M. femur-rubrum DeG., and other species.

wa H. E. Jaques (July 24): Grasshoppers are very abundant in many localities throughout the entire State. The worst outbreak since 1918.

Missouri

F. M. Wadley (July 10): Grasshoppers are quite generally abundant, and in some spots injurious. Injury to alfalfa is most marked, but some damage to corn and soybeans is noted.

Nebraska

M. H. Swenk (June 15 - 30): The severe outbreak of grasshopper chiefly of the two-striped grasshopper (Melanoplus bivittatus Say) which by the middle of June included Knox, Boyd, eastern Keya Pa and the northern parts of Holt and Rock Counties, developed during the last half of June to include not only all of Holt and Rock Counties, but thence south to the Platte River, in Hall, Buffalo and Dawson Counties, west through Custer County and east to include Cedar County, thus including altogether all or most of sixteen Nebraska counties. Over this area there has been much damage in the alfalfa and small grain fields, and serious damage to corn is now starting as the small grains ripen and the grasshoppers get their wings. The other grasshopper-infested areas in the State have about the same status as was described in my previous report.

Kansas

H. R. Bryson (July 23): Grasshoppers are very abundant in several localities and in northwestern counties. Most destructive in western one-third of State. Grasshopper injury is on the increase in the State. Kansas weekly crop report for July 20 stated that grasshoppers have injured alfalfa in both western and eastern Kansas. If dry weather continues to retard crop growth injury from this pest will become more apparent.

Arkansas

Dwight Isely (July 23): The yellow grasshopper has been unusually abundant, outbreaks causing serious local damage in northwestern Arkansas and in bottomlands along the White and Arkansas Rivers.

Oklahoma

C. E. Sanborn and assistants (July 22): Grasshoppers are very abundant. Local outbreaks in numerous sections of central and southwest part of State.

Alabama

J. M. Robinson (July 23): Grasshoppers are moderately to very abundant in part of Lee County, in cotton fields.

Texas

Topeka Daily Capital (June 15): Hordes of grasshoppers invade the business section of El Paso last night and in some places piled up more than a foot deep. Police scooped up box loads and gave them to fishes in public parks.

Montana

R. W. Gjullin (June 30): Melanoplus bivittatus Say and M. femur-rubrum DeG. are moderately abundant in the central valley and in the eastern part of State.

Wyoming

A. G. Stephens (July 20): Grasshoppers are very abundant in the northeastern and eastern sections of the State.



C. L. Corkins (July 20): The only new development in the grasshopper situation in Wyoming is the extension of the outbreak into the lower North Platte River Valley, particularly Goshen County.

Colorado

C. P. Gillette (July 22): Grasshoppers are very abundant generally in the eastern Colorado plains. To date the Experiment Station has put out poison enough to treat 200,000 acres with arsenic-bran mash.

Idaho

C. Wakeland (July 23): Grasshoppers, numerous species, are very destructive to farmers in some of the higher mountain valleys in northern Idaho, where control is difficult because of the large proportions of range land adjacent. Grasshoppers are causing serious injury to irrigated crops in many sections of southern and southeastern Idaho and considerable work is being done by individuals and small-scale organizations in control.

Nevada

G. G. Schweis (July 20): Grasshoppers are very abundant. Doing much damage to alfalfa and grain in Washoe County.

Utah

G. F. Knowlton (July 10): Grasshoppers are extremely abundant and causing serious damage to wheat, alfalfa, oats, barley, and many other crops in Utah. The lesser migratory locust (M. atlantis Riley) is usually the most abundant species encountered. The two striped locust (M. bivittatus Say), Packard's locust (M. packardi Scudd.), and several other species are encountered in damaging numbers in certain localities. This is the most serious grasshopper outbreak that has occurred so generally over Utah for a number of years.

Arizona

C. D. Lebert (July 28): Several species of grasshoppers, with M. differentialis Thos. and Trimerotropis sp. predominant, are still doing serious damage. Farmers are continuing use of hopper dozers and poison bran mash.

Oregon

D. C. Mote (July 13): C. A. Henderson, Klamath Falls, reports that so far grasshoppers have been kept in check, and tremendous kills were made in the Fort Klamath, Upper Klamath, marsh at head of the Williamson River, Sprague River, Sycan, and Upper and Lower Chewaucan. It is believed that 95 per cent of the early hatches were killed by the use of poisoned bran mash.

#### FIELD CRICKET (Gryllus assimilis Fab.)

North Dakota

J. A. Munro (July 18): The black field cricket is appearing in greater abundance in a number of counties than for the past few years. It is reported from McKenzie, Golden Valley, Williams, Burke, Grand Forks, Cass, and Traill Counties, both as a pest in houses and to field crops.

California

S. Lockwood (July 6): During the month of June reports came to this office indicating that the black field cricket (Gryllus



assimilis Fab.) was responsible for considerable damage to peaches in the northern part of Sacramento County. Later reports seem to indicate that the damage, if done by this insect at all, was very nominal and hardly of economic importance.

SPOTTED CAMEL CRICKET (Ceuthophilus maculatus Harr.)

Nebraska

M. H. Swenk (July 1): From Pierce County comes the report of a very unusual abundance of a common camel cricket which is threatening to do damage to alfalfa fields and pasture lands.

LUBBER GRASSHOPPER (Brachystola magna Gir.)

Texas

J. L. Webb (July 20): On July 7 O. G. Babcock reported that this large hopper has been quite numerous for the past two weeks and is quite evenly distributed about San Angelo, Sonora, Menard and Junction.

Louisiana

W. E. Hinds (July 25): Lubber grasshoppers are moderately abundant on soy beans.

MORMON CRICKET (Anabrus simplex Hald.)

Washington

L. P. Rockwood (July 3): An outbreak of this species near Page, between the Northern Pacific Railroad and Snake River, was reported by County Agent Ingham. The crickets were seen June 27 and 28. On the latter date mating was in progress. Crickets damaged a strip of winter wheat along one side of a field. On June 28 most of them had left wheat but were found abundantly in the uncultivated rolling hills, especially where sage brush occurred above 1,000 feet. They were broken up into scattered groups over a wide area of pasture land. Wheat will be harvested as soon as weather permits and further damage this year is not expected. There is a considerable acreage of dry-land wheat north and east of the crickets. This may be damaged in other years if the crickets move down into the farming region.

CUTWORMS (Noctuidae)

Tennessee

C. M. Packard (July 6): The variegated cutworm (Lycophotia margaritosa saucia Hbn.) is present in small numbers in every armyworm horde observed. It seems to have been the species responsible for damage to clover fields attributed to the armyworm. It is present by the million in a 30-acre field of crimson clover near Belvidere, observed June 5. It caused some injury by eating leaves and stems. The heads were too nearly mature for such injury. Migration into corn across a lane was stopped by turning hogs into the lane. Pupae were common June 16. The first adult in cages appeared June 18. About 90 per cent of the worms were parasitized by tachinids.

Wisconsin

E. L. Chambers (July 22): An unusual outbreak of cutworms has occurred throughout the State this summer, and at the present time the variegated cutworms (Lycophotia margaritosa saucia Hbn.) are doing the most damage. In several localities, including Douglas, Bayfield, Barron, Kenosha, Milwaukee, Racine, Ozaukee, and Washington, the armyworms (Cirphis unipuncta Haw.) were associated with the variegated cutworms and did serious injury for several days until brought under control by parasites. Apparently the variegated cutworms were much slower to be parasitized. More than 600 farms in Ozaukee County were infested and many fields of sweet clover and alfalfa completely defoliated and much injury done to corn and potatoes before the poisoned bran could be spread. Large quantities of poisoned bran were prepared at the county seats and distributed at cost to farmers in Ozaukee and Washington Counties.

Minnesota

A. G. Ruggles and assistants (July): The serious cutworm situation of the spring has now abated and the only report of importance is one on the variegated cutworm (Lycophotia margaritosa saucia Hbn.) as being abundant on tobacco in Benton County. (Abstract, J.A.H.)

North Dakota

J. A. Munro (July 3): Just yesterday I had the first report of the Bertha armyworm (Barathra configurata Walk.) for the season. It is already destroying fields of flax in the western part of Grand Forks County. (July 18): Two reports of Bertha armyworm injury to flax are reported from Benson and Grand Forks Counties, respectively.

Montana

R. W. Gjullin (June 30): The pale western cutworm (Porosagrotis orthogonia Morr.) is moderately abundant in the northern, central, and eastern parts of the State. (June 30): Army cutworms, Chorizagrotis auxiliaris Grote, are very abundant in the central part of the State. (June 30): Adults of the army cutworm are very abundant in the north central and central parts of the State.

Oregon

L. P. Rockwood (July 3): Spots comprising in all about one-fourth acre in a 200-acre field were damaged June 5, 3 weeks after the maximum flight of moths. Spots failed to increase in size although cutworms, Agrotis ypsilon Rott., averaged 7 per square yard in these places. Probably birds cleaned up the small bands of cutworms.

California

S. Lockwood (July): An unidentified Noctuid larva has been responsible for very severe damage to field and sweet corn on about 1,000 acres in the Mission and Tia Juana valleys of San Diego County. Reports indicate that this same condition exists in parts of Los Angeles County. The later sweet corn will be entirely ruined and the tonnage of the field corn will be cut severely.

This pest destroys the tassels when they are still in the boot and seems to like the silks, ears, and forming cobs of the younger



ears and bores into the stalk of the corn plant. It is not uncommon to find as high as four or five worms to one corn plant. Our attention was called to this by Mr. R. R. McLean, County Agriculture Commissioner of San Diego County.

ARMYWORM (Cirphis unipuncta Haw.)

Virginia

H. G. Walker (July 24): Although the first generation of the armyworm did considerable damage in the Norfolk section, the second-generation larvae have not been observed in the field. This would seem to indicate that the parasites and predators of the armyworm had greatly reduced their numbers. The second generation of larvae reared in the insectary are now nearly full grown.

Ohio

T. H. Parks (July 21): The armyworm outbreak extended between June 20 and July 3. A high percentage of the larvae were parasitized but the moths emerged during the middle of July and were attracted to lights. Good results were secured from the application of poisoned bran mash bait and not much corn was destroyed on farms where this was used. The greatest area of infestation covered parts of six counties in the south central part of the State. Outlying reports came from some counties in southwestern Ohio.

Indiana

C. M. Packard (July 6): Outbreaks of the armyworm were reported from a number of places in the southern half of Indiana in early June. Excellent results were obtained with poisoned bran mash spread broadcast. The worms developed in timothy, barley, wheat and rye fields, principally in the lower or richer spots which apparently had been most attractive to the ovipositing moths early in the spring. The crops were seriously injured or entirely ruined in a number of such areas. Migration to adjacent young corn and resulting injury to it was also observed.

Adult moths reared from both Indiana and Kentucky material proved to be the true armyworm (Cirphis unipuncta Haw.). Several tachinid and two hymenopterous parasites were reared. Parasitism was very heavy in Indiana and it seems doubtful if the next generation of worms will be seriously abundant. Parasites were also very abundant at Shelbyville, Ky., but seemingly not so much so as in Indiana. Many apparently healthy pupae are in the ground at Shelbyville and a sizeable second generation of worms this year is possible.

J. J. Davis (July 25): The armyworm appeared in destructive numbers in isolated points throughout the State. Definite reports were received as follows: Damaging rye, corn, timothy, etc., at Madison, Aurora, Logansport, Leroy, and in eight townships in Rush County where wheat was the principal crop damaged.

Kentucky

C. M. Packard (July 6): An outbreak near Shelbyville, Ky., visited June 17 and 23. More extended injury to barley seen in this area. The worms had finished feeding in some of the fields.



hence it was too late to apply control measures. Corn adjacent to barley was being destroyed.

igan

R. H. Pettit (July 1): Yesterday there appeared the first armyworm outbreak for Michigan for this year. It occurred at the Game Farm near Mason and about 20 acres of wheat were involved. (July 10): Armyworms have appeared in Presque Isle, Mason, Grand Traverse, and Ingham Counties. The attacks have not been so severe as at some times in the past, but considerable damage has been done.

ouri

Daily Drivers Telegram (June 23): Severe and widespread outbreaks of armyworms have been discovered in southeastern Missouri, particularly in Scott County, according to Plant Commissioner K. C. Sullivan of the Missouri State Board of Agriculture.

essee

C. M. Packard (July 6): In southern Tennessee some damage from the armyworm continued into first week in June. First pupae were observed in the field June 1 and practically all had pupated by June 12. The first adult in the cages appeared June 4. H. G. Cress, County Agent of Marshall County, put on a county-wide control campaign with poisoned bran broadcast over entire fields where infestation was present. This effort was so successful that the only loss in the county was to spring-planted clover and timothy in grain fields. In other counties where no such control effort was made there was much damage to oats, rye, barley, wheat, and corn. High parasitism by tachinids was observed in all localities. (C. Benton)

### FALL ARMYWORM (Laphygma frugiperda S. & A.)

ida

J. R. Watson (July 24): The most striking and newest development of the past month has been an outbreak of the fall armyworm. The outbreak has been very severe in the everglades (R. N. Lobdell), and locally severe as far north as Pinellas and Polk Counties. In the latter counties it has been mostly confined to crab grass. The worms are just appearing about Gainesville.

siana

W. E. Hinds (July 25): The grass worm is now maturing in at least the second generation and complaint of light infestation on several hundred acres of sugarcane was received from West Baton Rouge Parish on July 17. Examinations showed that most of the larvae had entered the ground for pupation. Those remaining were full-grown and a very large percentage was parasitized. We do not anticipate serious injury from the next generation.

### PAINTED LADY (Vanessa cardui L.)

England

J. V. Schaffner, Jr. (July 21): Larvae of this species appeared on hollyhock in Massachusetts about the third week in June

and since then many collections were taken on hollyhock and burdock in several Massachusetts, New Hampshire, Vermont, and Maine localities, as far north as Rutland, Vt., and Bangor, Me. This species has not been reported to us since 1926.

- Maine H. B. Peirson (July 22): The painted lady was very abundant in Augusta on hollyhocks, July 20.
- Ohio E. W. Mendenhall (July 21): I find the painted lady infesting thistles in southwestern Ohio. It fastens leaves together and is now in the pupa stage. (July 21): There is some abundance of this insect. I find the painted lady on hollyhock in the pupal stage in a garden in Springfield.
- Illinois W. P. Flint (July 21): The painted lady butterfly larvae are reported very abundant in northern Illinois on Canada thistles and hollyhocks. Larvae have also been taken by members of our staff in soybean fields, especially in the eastern part of the State.
- Minnesota A. G. Ruggles (July 21): Very abundant all over the State and in many places damaging sunflowers and the hollyhocks. Also reported on lettuce and rape. Great glee for the most part because of the attack on thistle.
- North Dakota J. A. Munro (July 18): The painted lady or thistle butterfly is abnormally abundant over a large section of the State, particularly the eastern half. The caterpillars have been feeding largely on the Canada thistle and to a lesser extent on hollyhocks and a few other plants.
- South Dakota H. C. Severin (July 14): Caterpillars of the painted lady reported general. Canada <sup>thistle</sup> chiefly is attacked though hollyhocks suffer considerably.
- Nebraska M. H. Swenk (July 1 - 15): During the early part of July a number of correspondents reported that the Canada thistles had been rather severely eaten by the larvae of the thistle butterfly.

#### WIREWORMS (Elateridae)

- Maryland E. N. Cory (July 9): Wireworms, Agriotes mancus Say, were received from J. H. Carter, County Agent, Oakland, Garrett County, who says that the worms appeared about ten days ago in a farmer's cornfield and have destroyed about one-half acre.
- North Dakota J. A. Munro (July 18): Wireworms were reported as abundant in Golden Valley County in corn which followed flax and in fields of corn and potatoes in McKenzie County, but scarce in Williams County, moderately abundant in Pembina County, and scarce in Morton County.



braska

M. H. Swenk (July 1 - 15): A Saunders County correspondent reported a potato field that had been planted in an old orchard, among the tree stumps, to have the tubers badly eaten by the wireworm Melanotus communis Gyll. (July 1): Wireworms, M. pilosus Blatch., were very injurious in a corn field in Dodge County during the last week in June, about 30 acres being involved in the injury.

Idaho

C. Wakeland (June 30): The usual reports of wireworms damaging spring crops are being received by our office, especially from the irrigated districts of southwestern Idaho. The range of the insect seems to be extending in the Twin Falls area since we are receiving more reports from there this season. Damage in general is not being so severe as during other years but injury is reported on potatoes in several new localities.

SAND WIREWORM (Horistonotus uhleri Horn)

North Carolina

J. N. Tenhet (July 3): In the experimental plots at this station a half acre of late potatoes was very severely injured by the sandy-land wireworm. The yield of marketable potatoes was cut at least 75 per cent. (July 16): Adults are becoming very scarce, and larval attack seems to be slackening. Larval injury has been very severe this spring.

WHITE GRUBS (Phyllophaga spp.)

Georgia

O. I. Snapp (June 30): May beetles have completely defoliated some young European elm trees which were planted for shade in the city of Fort Valley. The beetles worked at night, and the owners were attributing the trouble to some disease, since no insects were observed on the trees during the day.

Wisconsin

C. L. Fluke (June 30): White grubs are very abundant in southern Wisconsin only. Hatching from June 20 to date.

South Dakota

J. A. Munro (July 18): White grubs caused light injury to garden crops in Hettinger County and were moderately abundant in parts of Walsh County.



CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Ohio T. H. Parks (July): The Hessian fly has about doubled in population as determined through the annual wheat insect survey. No serious injury occurred to the present crop, which promises to be the largest in many years. The heaviest fly infestation is in the northeastern counties though it is now present in threatening numbers in nearly all sections of the State.

WHEAT STEM MAGGOT (Meromyza americana Fitch)

Minnesota A. G. Ruggles and assistants (July): More abundant than usual. As high as 10 per cent loss being credited to this insect in many wheat fields. (Abstract, J.A.E.)

North Dakota J. A. Munro (July 18): The wheat stem maggot has been noticeably present in the eastern counties of the State. Many fields in Traill County were reported to have suffered a loss of 10 to 12 per cent from this pest. A survey of fields in the Fargo vicinity shows a 2 to 3 per cent loss. In Richland County it is reported as causing a general loss of 0.5 to 1 per cent.

Nebraska M. H. Swenk (July 1): During the third week in June a few reports of an abundance of the wheat stem maggot were received from east central Nebraska, from Dodge County to Greeley County, but the damage was not widespread or very serious.

WHEAT STEM SAWFLY (Cephus cinctus Nort.)

Utah G. F. Knowlton (July 6): Six per cent of the culms in one wheat field examined at Hunter are infested by the western grass stem sawfly.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Oregon D. C. Mote (July 13): T. H. Chamberlin reports that adults had practically disappeared from the fields on June 6 in the Molalla district, although stragglers were caught as late as June 12. The parasite Eurytoma parva Phillips was very abundant on both the 5th and the 12th, but very scarce on the 27th. First adults of the parasite Ditropinotus aureovirdis Cwfd, June 1. They had not all issued from the overwintering stubble by June 27.

WHEAT STRAW WORM (Harmolita grandis Riley)

Utah G. F. Knowlton (July 21): Wheat straw worm counts made up to the present time are somewhat lower than the average for last year.

PLAINS FALSE WIREWORM (Eleodes opaca Say)

braska

M. H. Swenk (July 1): In Keith and Custer Counties a great abundance of the beetle of the plains false wireworm was reported during the last week in June. The beetles ate off young corn, oats, and cabbage plants at the surface of the ground, and in some instances did serious damage.

WHITE-LINED SPHINX (Celerio lineata Fab.)

uth Dakota

H. C. Severin (July 14): White lined sphinx caterpillars are abundant on tall dock but have been reported as doing injury to corn at Bruce. At times as many as 5 to 8 caterpillars are to be found on a single dock plant.

aho

C. Waktoland (July 23): The white-lined sphinx moth is very abundant on weeds near Moscow. The infestation appeared alarming but abated before reaching wheat. Larvae very heavily parasitized.

BEET ARMYWORM (Laphygma exigua Hbn.)

ifornia

H. Ryan (July 20): A limited infestation of armyworms gave considerable concern to holders of residential property in the small area about 5 miles west of the center of town. They were migrating from a harvested grain field to city lots but were found to be feeding only on Anagallis arvensis (poor man's weather vane) and doing no damage to shrubs or plants. We reared adults which were determined as Laphygma exigua Hbn. (beet armyworm) by Dr. Comstock of the Los Angeles County Museum.

SAY'S STINK BUG (Chlorochroa sayi Stål).

h

G. F. Knowlton (July 21): Say's plant bug was found causing moderate damage in many northern Utah wheat fields before the grain became ripe. Serious damage was observed in only a few fields.

ENGLISH GRAIN APHID (Macrosiphum granarium Kby.)

iana

J. J. Davis (July 25): The grain aphid was reported common on wheat heads at Kentland, Elkhart, and LaPorte, June 23-25.

higan

R. H. Pettit (July 1): Grain aphids seem to be pretty well spread over the State this year. All specimens sent in prove to be those of the northern grain aphid and no Toxoptera have been found.



CORN

AN ARCTIID MOTH (Apantesis rectilinea French)

Tennessee S. Marcovitch (July 2): Several new outbreaks of this insect reported from Lewisburg as doing serious damage to corn, tobacco and grasses.

AN ARCTIID MOTH (Apantesis phyllira Drury)\*

Tennessee C. M. Packard (July 6): Adults reared from larvae sent in by Mr. Benton from the April outbreak of this species in southern Tennessee were determined by Mr. Wm. Schaus as above. The last adult was seen in the field June 5. Field observations yielded no trace of second-brood larvae until a small infestation was seen on June 23 in a hillside pasture near Fayetteville, Tenn. On June 24 a considerable infestation of practically mature larvae was seen in a hillside pasture 8 miles northwest of Petersburg, Tenn. H. G. Cress, Marshall County Agent (Tenn.) reported (June 30) several outbreaks with damage to pastures up to 20 per cent and threatening injury to corn and tobacco. (C.Benton)

CHINCH BUG (Blissus leucopterus Say)

Ohio T. H. Parks (July 27): Chinch bugs have been reported damaging corn in several northern Ohio counties. There is no serious general outbreak in any part of the State, but the insect has increased rapidly during the past year. Excellent growing weather enabled corn to outgrow their attack.

Indiana J. J. Davis (July 25): Chinch bugs were reported as moderately abundant in cornfields in Whitley County about the middle of July.

Illinois W. P. Flint (July 20): Chinch bugs have been favored during the past month by dry weather over most of the heavily infested area. Serious damage to corn has resulted in a number of the south central and central counties with some scattered outbreaks outside of the generally infested area, the most northern of these being in Hancock County on the west side of the State.

South Dakota H. C. Severin (July 14): Chinch bugs are again building up their population in south central South Dakota. There has been little damage as yet. (Charles Mix and Tripp Counties.)

Iowa H. E. Jaques (July 24): Two serious infestations of chinch bugs are reported from Des Moines County.

---

\*Correction: Volume XI, No. 4, p. 172, Apantesis phalerata Harr. should read Apantesis phyllira Drury.



- ssouri F. M. Wadley (July 10): The chinch bug is much more abundant than last year, and has injured corn adjacent to wheat fields considerably.
- braska M. H. Swenk (July 20): Chinch bugs are scarce in a few southwestern counties.
- nsas H. R. Bryson (July 23): The chinch bug is very abundant and continues to be a menace in south central and southeastern Kansas. The southeastern counties, which include the three tiers running as far west as Sumner County, are still suffering from the ravages of chinch bugs. Young kafir sorghums are being most injured, owing partly to dry weather which retards the growth of the plants. The farmers in the extreme southeastern counties planted a considerable acreage to flax and soy beans, and this practice tends to avoid losses from this pest.
- CORN EAR WORM (Heliothis obsoleta Fab.)
- laware L. A. Stearns (July 22): The tomato fruit worm was reported as abundant at Camden, July 20.
- ryland E. N. Cory (July 9): Adults of the corn ear worm appeared about the middle of June. Egg desposition at College Park up to this date has been rather light as compared with the last three years. The insect is less prevalent than this time last year. Injury to early tomatoes has been slight on the Eastern Shore. Early sweet corn also is being attacked. (Determined by L. P. Ditman.)
- lo T. H. Parks (July 15): Corn ear worm larvae were damaging early ripening tomato fruits and were causing a loss of from 5 to 10 per cent of the marketable fruits.
- linois W. P. Flint (July 20): Larvae of the corn ear worm have been sent in from several localities. In most cases the corn had not yet come into silk and the larvae had been feeding in the stalk.
- mesota A. G. Ruggles (July): Towards the end of the month this insect became rather abundant on sweet corn in several localities in the southern part of the State. (Abstract, J.A.E.)
- uth Dakota H. C. Severin (July 14): It has been reported several times that every third hill has a worm in the forming ear.
- va H. E. Jaques (July 24): The corn ear worm has been reported as very abundant in only the extreme western part of the State.
- ssouri F. M. Wadley (July 13): The work of the early generations of the corn ear worm, on leaves and tassel of corn, is much more noticeable than usual.

Nebraska

M. H. Swenk (July 1 - 15): Dozens of farmers in eastern Nebraska have inquired concerning the abundance of corn ear worms working on their corn, boring through the bud and downward in the stalk, and devouring the upper leaves and the tassels. The first reports of damage of this sort came from the counties bordering the Missouri River, from Cedar, Dixon, and Thurston Counties south to Otoe, Nemaha, and Richardson Counties. This damage began to be apparent along the Missouri River during the last few days in June. By the middle of July it was showing up in counties farther west, as far as Madison, Platte, and Lancaster Counties. In many fields this injury has been serious. Not for at least the past 30 years have caterpillars of this first brood been so numerous as they have this year. This great abundance of corn ear worms of the first brood indicates the probability of unusually heavy damage to the milky and maturing kernels of the corn during August and September by the second and third broods of ear worms.

Kansas

P. M. Gilmer (July 14): The corn ear worm (determined by Heinrich) has been observed causing injury to apples in an orchard near Belle Plaine. Much of the fruit was completely hollowed out, leaving merely a shell attached to the tree. The injury was confined to trees with branches drooping until they made contact with the soil, although fruit as high as 6 or 8 feet above ground was attacked. The original infestation was apparently in a heavy planting of winter vetch which was used as a cover crop in the orchard. This had not been cut at the time the larvae were taken, but a good many fruits even at some distance from the ground had been attacked.

H. R. Bryson (July 23): Damage from the corn ear worm has been quite noticeable in different parts of the State. Complaints have been received from as far west as Nashville and Great Bend. The first complaint sent in was from Ottawa, July 3.

Oklahoma

C. E. Sanborn and assistants (July 22): The corn ear worm is very abundant.

Alabama

K. L. Cockerham (July 9): During the month of June early fresh corn was heavily infested with the corn ear worm. Inspectors for the Bureau of Markets estimated that at least 90 per cent of the corn moving after the middle of the month was infested. A lot of this injury did not throw the corn out of grade because it was confined to the first inch and a half of the silk end of the ear, which is allowed by the Bureau of Markets. There were some cases, however, where damage increased while the corn was in transit.



Mississippi

State Plant Board, Press Release (June 29): The most outstanding damage reported was caused by the corn ear worm or tomato fruit worm, attacking the buds of large corn plants and the fruit of tomatoes in many parts of the State. In most cases the worms sent to this office were almost grown and the indications are that they will stop feeding before the crops are seriously injured.

th

G. F. Knowlton (July 21): Reports of corn ear worm damage have been received.

CORN BILLBUGS (Calendra (Sphenophorus) spp.)

uth Dakota

H. C. Severin (June 29): Corn billbugs (Sphenophorus aequalis Gyll.) have injured corn principally near drained lake bottom and sloughs in several localities in the State.

Mississippi

J. M. Langston (July 23): Specimens identified by A. F. Satterthwait as Calendra gemari Horn were found injuring corn plants at Thorn on June 11.

GRAPE COLASPIS (Colaspis brunnea Fab.)

Mississippi

J. M. Langston (July 23): On June 29 Inspector J. E. McEvilly reports slight injury by this insect to corn plants at Smithdale. On June 29 a correspondent at Woodville sent specimens of this species to us and wrote as follows: "They have eaten almost all of the leaves off of our grapes and they eat strawberries also."

THE LESSER CORNSTALK BORER (Elasmopalpus lignosellus Zeller)

zona

C. D. Lebert (July 23): On fifteen acres of hegari near Phoenix fifty per cent injury has resulted.

CORN ROOT APHID (Auraphis maidi-radicis Forbes)

nessee

C. M. Packard (July 6): In early June a 10-acre field on creek bottom near Lynchburg was injured so badly by the corn root aphid as to require replanting. The field contained much Johnson grass. (C. Benton.)

CORN LEAF APHID (Aphis maidis Fitch)

Mississippi

J. M. Langston (July 23): A rather heavy infestation on grohoma and sagrain was reported on two properties at Glendora, Tallahatchie County, during the latter part of June.



SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Tennessee

C. M. Packard (July 6): The southern corn root worm larvae in conjunction with the sugar-cane beetle (Eutheola rugiceps Lec.) destroyed about 10 acres of corn near Fayetteville, June 3, necessitating replanting. They also destroyed half of the stand in 30 acres of corn near Estill Springs, Franklin County, June 12 - 16. (C. Benton.)

A CERAMBYCID (Prionus fissicornis Hald.)

Nebraska

M. H. Swenk (July 1 - 15): In Merrick County during the first week in July a cornfield was found attacked by larvae boring in the stalks, from the bottom upward.

CARROT BEETLE (Ligyrus gibbosus Deg.)

Mississippi

F. A. Smith (July 20): Rough headed corn stalk borer abundant on stubble land in Tate and DeSoto Counties.

CORN SILK BEETLE (Luperodes varicornis Lec.)

Mississippi

J. M. Langston (July 23): Beetles belonging to the genus Luperodes and probably to the species L. varicornis were reported as injuring corn silk at DeKalb on June 23, cotton and corn plants at Barland on June 27, corn at Braxton on July 8, and cotton at Hazlehurst on July 2.

SOYBEANS

ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Kby.)

Mississippi

J. M. Langston (July 23): On June 24 a correspondent at Fulton, Itawamba County, wrote as follows: "Infestation started a few days ago and the insects are literally eating the soybeans up now."

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi

State Plant Board, Press Release (June 29): The bean leaf beetle has injured beans, cowpeas, and soy beans in a number of localities by feeding on the leaves. This injury is not likely to become serious unless the plants are small or the beetles unusually abundant.

Louisiana

W. E. Hinds (July 25): The bean leaf beetle is still very abundant in many fields of soy beans, causing an abundance of holes in the foliage.

VARIEGATED FRITILLARY (Euptoieta claudia Cram.)

ennessee

C. M. Packard (July 6): Variegated fritillary larvae were observed doing commercial damage 4 miles northwest of Lewisburg, June 21. They were reported to have been in evidence 10 days. The larger portion of 13 acres of soy beans, and 1-1/2 acres of Kentucky Wonder beans, planted in corn have been destroyed, and there has been some injury to young corn. They have also been observed stripping all leaves from a half-acre of sweet potatoes and some were feeding on melon vines. The fields had a considerable growth of passion-flower vines, the favorite food plant, on which they were also feeding. Pupation is in progress. Adults are present in considerable numbers ovipositing on passion vines and ironweeds.

CLOVER

A LOOPER (Autographa biloba Steph.)

ennessee

C. M. Packard (July 6): Pupae of Autographa sp. (probably biloba) were taken on May 30, by N. H. Brown, Lincoln County Agent, from the base of crimson clover plants on which larvae had probably been feeding in a field near Dechard. The first moth appeared at light about June 7. Thousands were flying about street lights at Fayetteville on the night of June 11. A few stragglers appeared at light the two or three preceding and following evenings.

CLOVER SEED MIDGE (Dasineura leguminicola Lintn.)

regon

L. F. Rockwood (July 3): The rains all through June after the 8th were very favorable for this pest, and there will probably be much more than a normal infestation of the seed crop in fields not cut for hay before June 6, in Willamette Valley.

ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

lorado

C. P. Gillette (July 22): The alfalfa weevil is moderately abundant in the western part of the State. There are no new areas of importance.

aho

C. Wakeland (June 30): Southwestern Idaho has been little affected this season and the danger point is now past. Quite severe injury occurs in alfalfa seed crops in the central and southeastern portions of the State and loss in general to seed crops where spraying is not conducted.

Nevada G. G. Schweis (July 20): The alfalfa weevil is very abundant in western Nevada. Larvae have pupated. Damage was severe in June.

Utah G. F. Knowlton (July 25): The alfalfa weevil is moderately abundant in the northern part of the State.

Oregon Oregon Agricultural College, Insect Pest Report (June): The alfalfa weevil is moderately abundant in Malheur County on alfalfa from Ontario to Nyssa.

ALFALFA THRIPS (Frankliniella occidentalis Perg.)

California S. Lockwood (July 6): This thrips is perhaps in more than normal numbers in seed alfalfa fields in Contra Costa County. Growers there feel that because of this insect the seed crop will be shorter than usual. So far no indications of this have been observed.

ALFALFA LOOPERS (Autographa sp.)

Minnesota A. G. Ruggles and assistants (July): According to Professor Granovsky this insect is doing great damage to alfalfa at Renville. (Abstract, J.A.H.)

Mississippi J. M. Langston (July 23): Larvae belonging to the genus Autographa, and probably to the species Autographa brassicae Riley, were received from Meltonia, Bolivar County, on July 13, with the report that these insects had appeared in alfalfa fields and were doing considerable damage. Specimens were also received from Moorhead, Sunflower County, on July 14 with the report that these insects had appeared in considerable numbers in cotton fields.

ALFALFA CATERPILLAR (Pieris carythene Boisd.)

Minnesota A. G. Ruggles (July 21): The alfalfa butterflies have been flying by the millions in the Red River Valley and are found all over the State. No reports of damage by caterpillars have yet been received.

North Dakota J. A. Munro (July 18): Caterpillars of the alfalfa butterfly have been abundant in fields in most of the eastern part of the State. The adults have been sufficiently abundant to clog the radiators of tourist cars passing through. Many inquiries have been received concerning these butterflies.

Arizona C. D. Lebert (July 28): Adults and first-instar larvae are very abundant on alfalfa in the valley July 25. Millions of them were observed concentrating upon the uncut strips of the crop in fields where farmers were mowing.



COWPEAS

COWPEA CURCULIO (Chalcodermus acneus Boh.)

North Carolina W. A. Thomas (July 15): This insect is unusually abundant on cowpeas in this section and growers are complaining of the wormy condition of peas intended for table use. A large percentage of maturing seed have been punctured in feeding and egg laying.

South Carolina J. N. Tenhet (July 17): Early cowpeas are being very seriously injured by the cowpea pod weevil at Fairfax.

Mississippi H. Gladney (July 17): At Vancleave on July 3 the cowpea pod weevils were extremely numerous on cowpeas.

J. M. Langston (July 23): Specimens taken from cowpea vines were received from Philadelphia, Neshoba County, on July 20. Slight injury was reported.

PEA APHID (Illinoia pisi Kalt.)

Oregon L. P. Rockwood (July 3): The pea aphid has been reported attacking Austrian winter field peas in Washington County. Natural enemies gained control in early June. There was more reduction in the crop from dry weather in April and May than from aphid injury.

GRASS

SOD WEBWORMS (Crambus spp.)

Pennsylvania H. N. Worthley (July 22): Sod webworms (species not yet determined) are doing considerable damage to experimental plots of fine turf grasses.

Oio N. F. Howard (June 10 - 29): At Columbus, Cincinnati, and the intervening area crambid moths are extremely abundant on pastures and meadows. They are so numerous that they covered the radiator, headlights, and windshield of the automobile after dark between Cincinnati and Columbus.

T. H. Parks (July 20): A species of crambus larva is now very seriously infesting blue grass in lawns and blue grass and bent grass in golf greens. Almost every golf course is infested and many lawns in the city of Columbus have brown patches in them where the larvae are feeding. The larvae live in webs at or just below the surface. They work in patches and are attacking the lawns that have had the best kept and thickest grass. Injury occurred early in July and

is still continuing. Reports of the work of the larvae reach us from Columbus, Cincinnati, Zanesville, Circleville, Chillicothe, Lancaster, Bucyrus, Washington Court House and Newark. (July 22): Many webs now contain empty pupae cases from which the moths have emerged. Larvae are still doing damage.

Indiana

J. J. Davis (July 25): Sod webworms (Crambus sp.) were first reported to us by C. M. Packard, July 13, as damaging putting greens in a golf course near Lafayette. Since that date, July 14 - 23, we have received reports of damage to lawns by these webworms from Aurora, Putnam County, from Greenfield, Crown Point, Connersville, and Lafayette, and also one from Indianapolis.

Illinois

W. F. Flint (July 20): Sod webworms have been generally abundant and destructive in the northern part of the State as well as the central, many specimens being received from lawns and golf courses. The species most abundant is Crambus trisectus Walk.

J. H. Bigger (July 17): Webworms are very abundant, destroying lawns and golf greens over a large portion of western Illinois. They are damaging pastures materially.

Kentucky

W. A. Price (July 24): A sod webworm has ruined about one-half the lawns in the blue-grass section. In yards where lights were near by the destruction of the lawn is complete. The heavy flight of moths during June was attracted to the lights, where eggs were deposited. Tomato vines are failing to set fruit because of the blossoms wilting and dropping. This conditions prevails over central Kentucky.

Tennessee

C. M. Packard (July 6): Injury to corn and tobacco is quite general in Lincoln and adjacent counties. One cornfield under observation near Fayetteville had 30 out of 60 acres practically destroyed by webworms, there being from three to five larvae per hill. Johnson grass was equally attacked. Most of the larvae were mature by June 4.

A SCARABATID (Ochrosidia immaculata Oliv.)

Louisiana

W. E. Hinds (July 25): This beetle has been extremely abundant at lights in Baton Rouge for several nights following a series of rains from July 11 to 16.

A CURCULIONID (Hyperodes porcellus Say)

Connecticut

R. B. Friend (July): Serious injury to several greens at the Farmington County Club was apparently due to this insect, the larvae eating the roots. The species was determined by Mr. Mutchler of the American Museum of Natural History as

possibly H. porcellus, differing only in coloration on the ventral side. This insect was also found in dead patches of turf at Devon.

MEADOW FROGHOPPER (Philaeus spumarius Fall.)

Egon

D. C. Mote (July 13): Wilcox reports that the spittle bug nymphs Philaeus spumarius began changing to adults the fore part of June in the Willamette River Valley. Specimens from Eugene and Coos County, apparently the same species, did not change to adults until about July 1. All apparently have transformed to adults now, July 8.

VETCH

A BRUCHID (Mylabris brachialis Fahraeus)

ddle

lantic

ates

A vetch bruchid established in the Middle Atlantic States. During June, 1931, the writer collected a large number of specimens of Bruchus brachialis Fahraeus from a patch of vetch (Vicia sp.) at Haddon Heights, N. J. Judging from the enormous number of eggs which were being deposited on the pods, the percentage of infested seed will be high. The first adults to emerge from the new crop of seeds appeared July 15. This bruchid is one of several economically important bean weevils known to attack vetch in Europe, and is apparently the first to become established in the United States. My determination of the insect has been verified by Mr. J. C. Bridwell of Washington, D. C.

Adults of infested pods have been taken by the writer at the following New Jersey localities: Haddon Heights (several stations), Camden County; Moorestown, Vincentown, and Four Mile, Burlington County; and Newtonville, Atlantic County.

At the writer's request Mr. D. P. Perry looked for patches of vetch on his recent trips to Maryland from New Jersey. He collected several plants from patches at Felton, Kent County, Delaware, July 1, and at Salisbury, Wicomico County, Maryland, July 15. Both lots are infested.

This bruchid has thus far been definitely associated with at least two species of vetch.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

uisiana

W. A. Douglas (June 26): It was estimated that 5 per cent of the stalks of a field of Egyptian wheat were injured by the sugar cane moth borer. (June 26): Eight fields of corn in the Crowley section have been examined. Five of the eight fields had 100 per cent stalk infestation. In one field no bored stalks were found.



E. K. Bynum (June 29): Borers are rather plentiful around Houma and Raceland, but are more difficult to find in other sections.

W. E. Hinds (July 25): Sugarcane borer infestation is still light generally, especially in cane. The second generation is now maturing in corn and infestation in many cornfields is 100 per cent. This is especially true in the rice section where corn is unusually subject to severe damage. The transfer of moths from maturing corn to near-by cane will occur from August 1 on. Borer egg parasitization by *Trichogramma* from June 15 to July 15 has averaged about 19 per cent in uncolonized areas, 36 per cent in fields adjoining colonized areas, and 72 per cent in fields colonized June 13 and 26.

#### A WEEVIL (*Anacentrus* sp.)

Louisiana

J. W. Ingram and E. K. Bynum (June 25): A first-year stubble field near Arnaudville was almost totally ruined, and this was reported as possibly due to this small weevil. At this late date, however, it appeared that only about 10 per cent of the eyes had been killed by the weevil.

#### SUGARCANE BEETLE (*Eutheola rugiceps* Lec.)

Tennessee

C. M. Packard (July 6): The adults of the sugar-cane beetle in conjunction with the southern corn root worm larvae destroyed about 10 acres of corn near Fayetteville, June 3, necessitating replanting. They also destroyed half of the stand in 30 acres of corn near Estill Springs, Franklin County, June 12 - 16.

Louisiana

J. W. Ingram and E. K. Bynum (June 29): Numbers of dead beetles were found on the surface of the ground during the month. In rearing cages the number of eggs deposited decreased toward the end of the month, and none were laid after the 25th.

#### CORN LEAF APHID (*Aphis maidis* Fitch)

Louisiana

J. W. Ingram (June 25): In a survey trip in southern Louisiana small numbers were found on sugarcane, but considerable numbers on sorghum. This aphid is known to transmit the mosaic disease of sugarcane.

RICE

RICE WATER WEEVIL (Lissorhoptrus simplex Say)

Louisiana

W. A. Douglas (June 26): The rice water weevil situation is about as usual. The adults have caused some feeding scars on the plants, but not enough to be called injurious. Larvae are present in most fields. The farmers are beginning to realize that the water weevil is not an injurious pest of rice.

COTTON

COTTON LEAF WORM (Alabama argillacea Hbn.)

Texas

F. L. Thomas (July 22): The frequent rains during July throughout the State are favorable to the rapid multiplication and spread of this insect in Nueces, Hidalgo, San Patricio, and Refugio Counties. Worms were first found in Nueces County, June 27.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

Oklahoma

C. E. Sanborn and assistants (July 22): The cotton flea hopper is moderately abundant.

Mississippi

J. M. Langston (July 23): Cotton plants that had evidently been injured by P. seriatus were received from the county agent at New Albany, on June 25. Complaints in regard to injury by this insect have been received from various sections of the State during the past month.

CORN SILK BEETLE (Luperodes varicornis Lec.)

South Carolina

A. Lutken (July 25): This chrysomelid beetle was reported as damaging cotton in Winnsboro County, July 21.

## FRUIT INSECTS

### APPLE

#### APPLE APHID (Adhis pori DeG.)

- Connecticut P. Garman (July 23): Green apple aphids appeared in many orchards the latter part of June; but have decreased in numbers since the middle of July.
- New York N. Y. State Coll. of Agr., Weekly News Letter (July): During the month the apple aphid developed into a serious problem in some orchards in the Hudson River Valley. Towards the end of the month the situation had become very serious. In the western part of the State a very similar situation prevailed, in some cases necessitating the use of nicotine. (Abstract, J. A. H.).
- New Jersey N. J. State Coll. of Agr., Weekly News Letter (July): There are still a large number of green aphids on trees at the present time in Morris County.
- Pennsylvania H. N. Worthley (July 22): Green apple aphids are moderately abundant at State College.

#### WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

- Washington M. A. Yothers (July 17): This aphid got an early start in March, April, and May but by mid-June it had been pretty well cleaned up by predators. During the past two or three weeks it has increased in tremendous numbers until it is now more abundant than usual at this time of year, in Wenatchee.

#### CODLING MOTH (Carpocapsa pomonella L.)

- New Hampshire L. C. Glover (July 22): The codling moth is moderately abundant. It is plentiful in certain orchards.
- New York N. Y. State Coll. of Agr., Weekly News Letter (July): The earliest codling moth larva to be observed in the extreme northeastern corner of the State in Clinton County was seen on June 20. During the middle of July codling moth injury was much more serious than at the same time last year. Poorly sprayed orchards are running from 20 to 60 per cent infestation in the Hudson River Valley. The bait pails indicate that the peak of moth emergence appeared about July 7. The first mature codling moth larva was found under bands on July 4. In the western part of the State emergence was at its peak about July 1. During the middle of July the amount of injury increased very materially.
- New Jersey N. J. State Coll. of Agr., Weekly News Letter (July): Second-brood side worms are now active in southern New Jersey. Counts made of first-brood injury indicate that the damage in most orchards is greater than last year.



msylvania

H. N. Worthley (July 9): Mature larvae started cocooning June 27. A few spring-generation adults are still about. The spring generation is very abundant at Biglerville, Adams County, as many as 22 stings per apple in well-sprayed Yorks. (July 22): Summer-brood moths are now emerging.

T. L. Guyton (July 27): The codling moth is very abundant in Franklin County.

avare

L. A. Stearns (July 22): Second-brood eggs of the codling moth are now hatching; infestation is severe in some orchards; where supplementary control measures were practised and thorough spraying was accomplished injury is but moderate.

tyland

E. N. Cory and assistants (July): The first adults emerged at Hancock July 7.

orgia

C. H. Alden (July 20): The codling moth is very abundant at Cornelia. There are many stung and wormy fruits in commercial orchards. Second-brood moths are now laying eggs. Infestation is heavier than in 1930. The hot, dry weather of this year is ideal for multiplication.

o

T. H. Parks (July 21): This insect is much more abundant than usual in the orchards where it has been a problem. Second-brood moths commenced emerging in Lawrence County June 29, at Columbus July 9, and at Wooster July 13. No moths of the second brood have yet emerged along Lake Erie. More thorough spraying is in progress than for many years and in some orchards the amount of wormy fruit present in June indicated that the losses from the second brood would be heavy. The problem is most serious in the southern third of the State and in Ottawa County in north-western Ohio.

inois

W. P. Flint (July 20): Infestations are generally heavy in south central, central, and western Illinois with scattered orchards showing very heavy infestation in the southern part of the State. Collections under bands in western Illinois have yielded about ten times the number of larvae taken from the same number of trees in the same orchard on the corresponding dates of 1930. In eastern Illinois approximately 25 times as many larvae have been taken under bands during the last three weeks as were taken last year.

tucky

C. O. Eddy (July 10-15): Pail-trap catches of the codling moth were very high during the period of July 10 to 15 at Henderson and Paducah.

consin

C. L. Fluke (June 30): The codling moth is moderately abundant. The first-brood larvae began hatching about June 22 in central and southern Wisconsin.

Minnesota

A. G. Ruggles and assistants (July): Codling moths are running from scarce to moderately abundant throughout practically the entire State. No very unusual abundance has been reported in any county (Abstract, J.A.H.)

Iowa

H. E. Jaques (July 24): The codling moth is moderately abundant over much of the State.

Missouri

R. M. Jones (July 20): The peak of the second brood of the codling moth hatching is expected around July 28 to August 1. The infestation in different orchards varies considerably.

Nebraska

M. H. Swenk (July 1-15): The flight of the spring brood of the codling moth began diminishing about June 20, and by the end of the month had dwindled so that moths were no longer being taken at the bait traps. By July 10 no spring-brood moths were left alive in our insectary, indicating the completion of that brood. The first moth of the first brood emerged on July 4. This is four days earlier than last year, seven days earlier than 1929, and nine days earlier than in 1928. Moths again appeared in the bait traps on July 6, and have since been taken in increasing abundance. The codling moth is building up an unusually heavy abundance in the first brood this year.

Colorado

C. P. Gillette (July 22): Codling moths are very abundant in the fruit district generally.

Idaho

C. Wakeland (June 30): The prolonged severe winds of early spring resulted in very poor spraying at the time of the first cover spray and caused the omission of sprays in some instances, which has resulted in a heavy infestation of first-brood larvae in the apples. While the overwintering population was not so large as some years, it is likely that severe injury will occur this season because of inadequate cover sprays on the first brood.

Nevada

T. H. Parks (July 20): The codling moth is very abundant in western Nevada. Unsprayed fruit is all wormy.

Utah

G. F. Knowlton (July 25): The codling moth is moderate to very abundant in the northern part of the State.

Washington

E. J. Newcomer (July 21): Moths of the second brood began flying in some numbers July 8, and reached a high point July 20, which may be the maximum for the brood in Yakima County.

Oregon

D. C. Mote (July 13): The first brood is over. The second brood had not started to emerge on July 8 in the Willamette Valley. (B. G. Thompson)



APPLE TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

York N. Y. State Coll. of Agr., Weekly News Letter (July): The first egg masses were observed in Ulster County on June 29 and a few days earlier the first eggs were observed in Dutchess County. (Abstract, J.A.H.).

Pennsylvania J. N. Knull (June 24): There has been a very heavy infestation in Pike County. The larvae were found feeding on scarlet oak, red oak, white oak, rock oak, and scrub oak. Some oaks were entirely defoliated. First moths emerged about June 28. All of the moths emerged July 4.

SPRING CANCKER WORM (Palaeocrita vernata Peck)

Wisconsin E. L. Chambers (July 21): Many farm orchards located along the eastern part of the State, where spraying is not thoroughly done, have been defoliated by the spring canker worm.

APPLE LEAFHOPPERS (Cicadellidae)

Massachusetts A. I. Bourne (July 25): Apple leafhoppers are moderately to very abundant.

Connecticut P. Garman (July 23): Leafhoppers appeared in considerable numbers early in the season, but have decreased during July. They are apparently decreasing in most orchards though nymphs of the second brood are showing up in limited numbers in New Haven and Hartford Counties.

New Jersey N. J. State Coll. of Agr., Weekly News Letter (July): Leafhoppers have been noticed to be quite severe in most of the apple orchards visited in Cumberland County.

Pennsylvania J. R. Stear (July 22): Very abundant in Ligonier.

Delaware L. A. Stearns (July 22): Apple leafhoppers are rather abundant throughout the State.

Kentucky C. O. Eddy (July 20): Infestations were becoming heavy in western Kentucky July 17.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Wisconsin E. L. Chambers (July 21): While the San Jose scale has been confined to less than a dozen counties in Wisconsin and has never until recently been found in farm orchards, it has been spreading and a dozen new localities have been added to the known infested areas, although none have been found in our commercial orchards, in Waukesha, Grant, and Jefferson Counties.



Mississippi

J. M. Langston and assistants (July): The San Jose scale has been reported as very serious from a number of counties during the month, in many cases causing the death of peach and other deciduous fruit. (Abstract, J.A.H.)

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): Apple maggot flies began emerging in the lower Hudson River Valley the last week in June and the first injury was observed in Early Strawberry apples in Ulster County July 2. The flies were observed to be quite numerous during the middle of the month (Abstract, J.A.H.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (July): Apple maggot flies have been discovered in three orchards.

Michigan

R. H. Pettit (July 10): The first adults of the apple maggot appeared in Berrien County on the 8th and 9th of July. This is about ten days later than the average emergence.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): In the northeastern corner of the State, in Clinton and Essex Counties, apple curculios were pupating by the middle of the month and a few adults had already emerged by July 13. Late in June the injury was severe in the southern half of the Champlain Valley. In one 10-acre block from 30 to 40 per cent of the fruit showed injury. (Abstract, J.A.H.)

APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Ohio

J. T. Houser (July 10): The apple flea weevil is very destructive in one orchard in particular near Chillicothe. There has been a considerable decrease in abundance from 1930 at Amherst, and it is scarce in the original center of infestation at Delaware.

COMMON RED SPIDER (Tetranychus telarius L.)

Washington

M. A. Yothers (July 17): This mite, which ascended the fruit tree trunks in early April, has now become extremely abundant and injurious, particularly to the fruit and foliage of Delicious apple trees in many orchards in this section.

PEACH

PEACH BORER (Aegeria exitiosa Say)

South Carolina

A. Lutken (July 25): The peach borer is moderately abundant in the Piedmont area. Severe damage to untreated trees.

Georgia

O. I. Snapp (July 14): The first pupation of the season in the field was recorded today. Many larvae are now full grown. The infestation is rather heavy in orchards in Fort Valley, which are neither treated with paradichlorobenzene nor wormed.

PLUM CURCULIO (Conotrachelus nemophar Hbst.)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): Up to July 10 a few adult plum curculios were still to be observed laying eggs in the lower Hudson River Valley. In the western part of the State injury has been reported to as high as 20 per cent of the Rhode Island Greening apples and there has been very serious injury to prunes in most blocks. Peaches are also suffering some injury. (Abstract, J.A.H.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (July): Peach growers in Monmouth County are reporting trouble with the curculio. It is reported from Cumberland County as doing considerable harm. Curculio injury is reported from Mercer County as being slight.

Delaware

L. A. Stearns (July 22): First-brood adults of the plum curculio have been emerging since early in July. Very abundant in Sussex County.

Georgia

O. I. Snapp (July 10): Eggs of the second generation began to hatch in the insectary on July 5. The infestation is unusually light, and to date the insect has caused practically no damage to the peach crop. (July 20): 51,721 peach drops were cut open and examined during May and June and of these only 670, or 1.3 per cent, were found to be infested with curculio larvae. The infestation continues to be the lightest in 13 years. Elbertas are beginning to ripen. All other varieties have moved with no damage from curculio in Fort Valley.

Florida

E. W. Berger and G. B. Merrill (July 23): The plum curculio is very abundant on late peaches at Gainesville.

Illinois

W. P. Flint (July 20): Plum curculio adults are, according to Mr. Chandler, beginning to emerge in southern Illinois. The insect is much less abundant than usual in the southern and central parts of the State.

Minnesota

A. G. Ruggles and assistants (July): The plum curculio has not been reported as seriously abundant from any part of the State during the month. (Abstract, J.A.H.)

Tennessee

H. G. Butler (July 29): Second-brood eggs were deposited at the insectary July 13th and on July 27th the first mature larvae of this brood left the fruit. With the beginning of the peach harvest less than two weeks away the curculio fruit infestation is still so low as to be negligible in this area.



Mississippi

J. M. Langston and assistants (July): The plur curculio as a whole is not unusually abundant, only two counties reporting large numbers. (Abstract, J.A.H.)

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

P. Garman (July 23): The first brood is extremely light; the second brood is unusually heavy in practically all orchards. Parasitism by *Trichogramma* is moderate to light, 20 to 80 per cent. Parasitism by *Macrocentrus* and other species is light.

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): Although oriental fruit moth larvae were about half grown by the middle of the month their damage was for the most part to terminal growth only. However, the first larva to be found in a peach in this part of the State was observed July 13. In the western part of the State the damage seems to be more widespread in general than last year. (Abstract, J. A. H.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (July): Peach growers are reporting trouble with the oriental fruit moth in Monmouth County.

South Carolina

A. Lutken (July 25): The oriental fruit moth is moderately abundant in the Piedmont area. There is a slight increase.

Georgia

O. I. Snapp (July 20): The broods are now overlapping. Twig injury has practically stopped, but an occasional larva is being found in ripe fruit in Fort Valley. The infestation continues very light.

C. H. Alden (July 20): The oriental fruit moth is scarce at Cornelia. There is very little twig or fruit injury, much less than in 1930.

Illinois

W. P. Flint (July 20): The oriental fruit moth continues to be quite scarce in all but the extreme southern part of the State. In the southern part of the State it is only moderately abundant and there is very little injury to fruit as yet.

Tennessee

H. G. Butler (July 29): Trap records during the present season have consistently indicated a smaller moth population this year than last. The percentage of parasitism noted in field-collected larvae maturing in July is considerably higher than that of the June collection. Most of the parasites so far obtained are *Macrocentrus delicatus* Cress.

Mississippi

J. M. Langston (July 23): Peach trees injured by larvae of the oriental fruit moth were received from Sallis on June 26, from Wesson on July 10, and from Jackson on July 10.

Ohio

J. T. Houser (July 10): The oriental fruit moth is very abundant. Serious losses are in prospect.



PEACH TWIG BORER (Anarsia lineatella Zell.)

California

S. Lockwood (July 27): The peach twig borer has been more abundant than ordinarily experienced in the Sacramento Valley counties where canning and fresh peaches are raised extensively. Abandoned or neglected orchards have been largely responsible for this increased population.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

10

T. H. Parks (July 21): We are receiving complaints about this insect and frequently visit orchards where trees are dying from its attack. It is apparent that the injury is aggravated because of the drought of 1930.

GREEN STINK BUG (Acrosternum hilaris Say)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July 20): Among the unusual pests which have caused a commotion among a few growers has been the green soldier bug on peaches in eastern New York.

A PLANT BUG (Lonidea robiniae Uhl.)

Kentucky

W. A. Price (July 24): This species was reported to be common and feeding on peaches at Huston.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

Connecticut

P. Garman (July 23): The pear psylla is abundant in practically all pear orchards.

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): Early in the month the pear psylla became a serious problem in the lower Hudson River Valley. In the western part of the State the insect is also extremely numerous. During the second week of July practically all commercial growers were spraying in this part of the State for the control of this pest. (Abstract, J.A.H.)

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

Illinois

W. P. Flint (July 20): Leaves infested with this insect have been sent in by a number of persons. Apparently the mite is more abundant than usual although no serious commercial damage is caused by it.

PEAR MIDGE (Contarinia pyrivora Riley)

New York

N. Y. State Coll. of Agr., Weekly News Letter (June): A real infestation of the pear midge was found June 22 in a pear orchard, mostly on Clapps in eastern New York. The same pest was observed in another orchard June 11 at Clintondale.

## CHERRY

DARK CHERRY FRUIT FLY (Rhagoletis fausta O.S.)

Michigan

R. H. Pettit (July 1): The service by means of which dates for spraying to control the two species of cherry maggots are advised is progressing very nicely. Yesterday, on the 29th, the black-bodied fruit fly emerged in our cages at Northport, in Leelanau County. Farther south emergences have been occurring for some time and much spraying has been done.

CHERRY FRUIT FLY (Rhagoletis cingulata Loew)

Oregon

D. C. Mote (July 13): S. C. Jones reports that the cherry fruit fly reached the peak of emergence in June. A few flies are still emerging. First eggs hatched in the laboratory on June 21. Maggots are being found in large numbers in the field. First maggots were found in the field June 27; both visible and half grown maggots at Springfield on that date.

## PLUM

THISTLE APHID (Anuraphis cardui L.)

Idaho

C. Wakeland (June 30): Prune trees throughout the southwestern Idaho have been heavily infested with the thistle aphid, which has caused much early spring spraying.

## RASPBERRY

RED SPIDER (Tetranychus telarius L.)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July 20): The red spider situation in Brant and North Colling has developed to a very acute stage, counts made showing anywhere from 300 to 400 red spiders per leaf on red raspberries. Quite a few of the leaves have already turned brown and died.

RASPBERRY CANE BORER (Oberea bimaculata Oliv.)

Michigan

R. H. Pettit (July 20): It will interest you to know that for two or three years back this species has been becoming more and more numerous in Michigan, until now it is more plentiful than I have ever thought to see it. It works, of course, on red raspberries and on roses.

GRAPE

SIX-SPOTTED GRAPE BEETLE (Pelidnota punctata L.)

Connecticut

W. E. Britton (July 23): 61 beetles were collected in one city garden within a week in New Haven

GRAPE COLASPIS (Colaspis brunnea Fab.)

Indiana

J. J. Davis (July 25): The grape colaspis was very destructive to grape and also ate pussy willow at Salem July 1, to beans at Aurora July 6, and to beans, grapes, and rhubarb at Paoli July 10.

GRAPE LEAF SKELETONIZER (Harrisingia brillians B & McD.)

Arizona

C. D. Lebert (July 28): Quite numerous in spots throughout the valley with severe foliage injury at several places.

GRAPE LEAFHOPPER (Erythroneura comes Say)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (July): The nymphs of the grape leafhopper are now very abundant in many vineyards. Leafhoppers have done serious damage to many of the vineyards in Monmouth County. In fact we saw one vineyard yesterday which was completely defoliated. However, this is not a picture of the conditions in the county as a whole, since there are other vineyards that are in fine condition.

Delaware

L. A. Stearns (July 22): The second-brood eggs of the grape leafhopper are now hatching.

North Carolina

Z. P. Metcalf (July 21): The grape leafhopper is very abundant.

Ohio

G. A. Runner (June 25): The grape leafhopper is abundant in all grape districts along the south shore of Lake Erie. In some localities considerable damage was done to older grape leaves by adults of the overwintering brood. Nymphs of the first and second instars are present in large numbers on the mainland and adjacent islands. About 85 per cent of the adults of the overwintering brood now present are females.

Arizona

C. D. Lebert (July 28): Quite abundant on grapes in the Phoenix area. Very severe leaf injury at several places.

California

S. Lockwood (July 27): The grape leafhopper has not been responsible for as much damage in Kern County as in other counties in the San Joaquin Valley. Fresno, Madera, and parts of other northern counties of this valley have suffered extremely. The tonnage of marketable grapes will be reduced by a rather large percentage due to this insect and the hot, dry weather experienced this summer.



## CURRENT

### CURRENT BORER (Synanthedon tipuliformis L.)

North Dakota J. A. Munro (July 18): Adults of the currant borer were first noticed in the vicinity of Fargo June 24. Many of the currant bushes had been badly injured by the pest.

### IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

New York N. Y. State Coll. of Agr., Weekly News Letter (July): The imported currant worm broke out in a currant patch in Marlboro, Ulster County, and about consumed the foliage.

### CURRENT APHID (Cryptomyzus ribis L.)

Connecticut N. Turner (July 1): Considerable damage was done to a small plot of currants in Ridgefield. Coccinellid larvae are abundant.

## BLUEBERRY

### CRANBERRY ROOT WORM (Rhagoletus picipes Oliv.)

Florida J. R. Watson (July 24): Blueberries were attacked by the flea beetle near Palatka.

### GOOSEBERRY FRUIT WORM (Zophodia grossulariae Riley)

Mississippi H. Gladney (July 17): The gooseberry fruit worm was doing noticeable damage to blueberries in the field near Ocean Springs on June 29.

## PECAN

### FALL WEBWORM (Hyphantria cunea Drury)

Mississippi J. M. Langston and assistants (July): The first colony of the fall webworm was noticed at Greenville July 2, on pecan. Since that date scattered colonies have been noticed. As yet there is no apparent general infestation. The fall webworm is scarce over six north-west counties.

North Carolina W. A. Thomas (July 18): It was observed today that these insects were just beginning to show up with their unsightly webs in the pecan trees of Chadbourn.

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Florida

J. R. Watson (July 24): The nut case bearer of ~~pecans~~ has been unusually bad, particularly in the northeastern part of the State. On trees which set a light crop the nut case bearer has in some instance taken nearly all of them.

E. W. Berger and G. B. Merrill (June 26): The pecan nut case bearer is very abundant in Gainesville and Hawthorn.

PECAN CASE BEARER (Acrobasis juglandis LeB.)

Georgia

J. B. Gill (July 26): The larvae are now feeding on the lower surface of the pecan leaflets, and indications point to a moderate infestation in the pecan orchards in the southern portion of the State.

Florida

J. R. Watson (July 24): The leaf case bearer in the Monticello section is unusually scarce for this season of the year. (F.W.Walker)

Mississippi

J. P. Kislanko (July 20): The pecan leaf case bearer is moderately abundant. On July 8 many larvae of the summer generation were observed. At the same time there were many larvae and pupae of the preceding generation, in Stone County.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Mississippi

J. M. Langston (July 23): A rather heavy infestation was reported by a pecan grower at Ocean Springs, on July 6.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi

E. Gladney (July 19): The walnut caterpillar is moderately abundant on pecans at Ocean Springs.

J. P. Kislanko (July 20): The first colony of the walnut caterpillar this year was observed on July 16. The colony was very small, six larvae. Several adults have been caught by the light.

PECAN CATOCALA (Catocala viduata Guen.)

North Carolina

Z. P. Metcalf (July 21): The pecan catocala is very destructive in Onslow County.

Mississippi

J. M. Langston (July 23): The pecan catocala attracted more attention this year in various sections of the State than for several years. Recently specimens have been received from Jasper, Scott, and Coahoma Counties.

-362-  
PECAN APHIDS (Aphidae)

Mississippi

J. P. Kislanko (July 20): Up to this time pecan aphids are moderately abundant. Monellia costalis Fab. is more abundant than Myzocallis fumipennellus Fitch, which is now appearing with some foliage injury on the Schley and Pabst varieties.

Georgia

J. B. Gill (July 26): The black pecan aphid, (M. fumipennellus Fitch) is moderately abundant on pecan trees in southern Georgia. As a whole aphid injury in pecan orchards has been very much reduced from former years. However, at this time there is a slight increase in the black pecan aphid and before the close of the season this species may cause some serious defoliation in some orchards in the southern part of Georgia.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Louisiana

W. E. Hinds (July 25): The citrus whitefly is very abundant on citrus, privet, etc.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby)

Cuba

Monthly Letter, Bureau of Entomology, U. S. Dept. of Agr. (June): C. P. Clausen, who left Washington last November for the Far East to continue his search for parasites of the citrus black fly, arrived in Havana, Cuba, on June 3 with a shipment of parasites, which will be liberated there. On May 31 Mr. Clausen inspected the infestations in Panama, where colonies of one of the parasites, Eretmocerus serius Silv., had been liberated in January, and reports that whereas at the time of liberation the trees were heavily infested, now citrus is almost entirely free from the black fly.

SCALE INSECTS (Coccidae)

Florida

J. R. Watson (July 24): The dry weather has also prevented the development of the entomogenous fungi, so that scale insects, including the purple scale and the Florida red scale, and also the whitely, are more abundant than usual at this season.

E. W. Berger and G. B. Merrill (July 23): The purple scale Lepidosaphes beckii Newm., is very abundant in some groves at McIntosh and Micanopy.



zona C. D. Lebert (July 28): The cottony cushion scale, Icerya purchasi Mask, in this valley is practically reduced at the present time. Every known infestation has been supplied with the predatory lady beetle, Rodolia cardinalis Muls., and the majority of infestations have been cleaned out.

CITRUS MEALYBUG (Psuedococcus citri Risso)

rida J. R. Watson (July 24): Mealybugs have been very abundant in groves. The experiment station has been liberating several thousand Cryptolaemus montrouzieri Muls. These are multiplying rapidly and in groves where they were first introduced mealybugs are becoming scarce.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

rida J. R. Watson (July 24): Another insect which has been favored by the dry weather is the rust mite, whose attacks are extending much later in the season than normally.

E. W. Berger and G. B. Merrill (July 23): The citrus rust mite is very abundant in some groves at McIntosh and Micanopy.

AN ANT (Pheidole sp. (probably P. desertorum)  
var. Maricopa Whl.)

zona C. D. Lebert (July 28): Severe injury by girdling young citrus trees near Mesa, about 60 per cent of the young trees became infected with gummosis from having the bud union covered. The ants seem to be attracted to gum pockets and have in nearly every case at least partially girdled the tree by removing the bark around the bud union and below.

TRUCK - CROP INSECTS

BLISTER BEETLES (Meloidae)

- Indiana J. J. Davis (July 25): Blister beetles were the subject of frequent inquiry during the past month, having been reported from a great variety of crops and from practically all parts of the State.
- North Dakota J. A. Munro (July 18): Blister beetles (Cantharis nuttalli Say) have been very abundant this season. They are reported from McKenzie, Golden Valley, Adams, Ransey, LaMoure, Williams, Kidder, Burke, Burleigh, Grand Forks, Pembina, Towner, Morton, and Walsh Counties. Reports indicate that they have caused injury chiefly to caragana, alfalfa fields, and garden stuff.
- South Dakota H. C. Severin (July 14): Blister beetles of many species are doing much harm to crops and trees in South Dakota. Cottonwood, spruce, caragana, legume crops, potato, and garden truck are badly damaged in many sections.
- Nebraska M. H. Swenk (July 1 - 15): Blister beetles continue to be reported, not only from eastern Nebraska but during the period here covered also from southwestern Nebraska, from Kearney, Gosper, Lincoln, and Keith Counties southward. In eastern Nebraska the species concerned has in all cases been Epicauta lemniscata Fab.; while in southwestern Nebraska Macropsis immaculata Say, M. segmentata Say, and M. unicolor Fab. have been the species concerned. The damage was chiefly to potato but beets, beans, and lettuce, and other garden truck (except onions) were commonly attacked also.
- Kansas H. R. Bryson (July 23): Blister beetles are reported as abundant in several localities. This injury is not confined to the western counties since numerous complaints have come from eastern counties in the vicinity of Wellsville and Columbus.
- Alabama J. M. Robinson (July 23): Blister beetles (Epicauta sp.) are very abundant on mangels at Auburn. Macropsis unicolor Kby. destroyed 4 acres of soy beans at Tuscaloosa. Blister beetles, Epicauta cinerea Forst., are very abundant, having destroyed 2 acres of soy beans at Hamilton.
- Louisiana W. A. Douglas (June 26): The first blister beetles, Epicauta lemniscata Fab., found this year at Crowley on Ootootan soy beans June 23.

SAY'S BLISTER BEETLE (Pomphopoea sayi Lec.)

New Hampshire

L. C. Glover (July 1): There have been several reports of Say's blister beetle this month. It seems to be quite abundant in certain localities on the western side of the State.

Connecticut

E. P. Felt (July 21): Say's blister beetle appeared in very large numbers at Danbury.

New York

C. R. Crosby (June 26): Many specimens were received from New Bremen. They were very numerous on beans.

Wisconsin

E. L. Chambers (July 21): Corn in LaCrosse County was reported injured in one spot by large numbers of these giant bluish-black blister beetles. More than 50 specimens were collected by the farmers without difficulty in a small area, they were so abundant.

GARDEN WEBWORM (Loxostege similalis Guen.)

North Dakota

J. A. Munro and assistants (July): Garden webworms have been very abundant in the southern part of Steele County. (July 3): The garden and sugar beet webworms are unusually abundant and causing much damage.

Nebraska

M. H. Swenk (July 1): During the last week in June, in Johnson and northern Gage Counties, there was a severe local outbreak of the garden webworm in the cornfields, some of which were badly damaged.

Kansas

H. R. Bryson (July 23): The garden webworm has been very abundant during the past month and has caused considerable injury to alfalfa, soybeans, corn, and garden crops.

FALSE CHINCH BUG (Nysius ericae Schill.)

South Carolina

J. M. Tenhet (July 15): Several patches of early cowpeas in this vicinity are being seriously damaged by the false chinch bug.

Washington

C. N. Ainslie (July 7): The false chinch bug is very numerous over a large area this summer, and swarms of the bugs are discovered when their shelter is removed. Actual damage is not easy to estimate, for its food plants are various, but it has frequently been mistaken by farmers for the true chinch bug.

Nebraska

M. H. Swenk (July 1 - 15): In the southwest, especially Deuel, Dundy, Redwillow, and Frontier Counties, the false chinch bug has been very numerous on garden truck of all kinds, but tending to concentrate largely on the beets.



Texas

O. G. Babcock (July 7): For the past few days the false chinch bug has been appearing in myriads and is just beginning to reach the winged stage. No damage is reported.

F. L. Thomas (July 22): The false chinch bug has been the cause of considerable complaint. It has caused injury to cotton, cowpeas, oats, and hogari in Madison, Burleson, Milam, and Erath Counties.

Colorado

C. P. Gillette (July 22): The false chinch bug is moderately abundant in the eastern part of the State in the plains area.

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Alabama

J. M. Robinson (July 23): The vegetable weevil is moderately abundant in Abbeville, the farthest point east in Alabama.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): Potato beetles appeared to be more abundant than they have been for the past two seasons in western New York.

New Jersey

N. J. State Coll. Agr., Weekly News Letter (July 7): Potato bugs are worse on tomatoes than usual.

Pennsylvania

J. N. Knull (July 9): The Colorado potato beetle has been abundant in small gardens in the vicinity of Mont Alto.

C. A. Thomas (July 23): Potato beetles have been abundant and destructive on unsprayed potatoes in Chester County this month.

Maryland

E. N. Cory (July 21): The Colorado potato beetle is very abundant

Ohio

J. T. Houser (July 10): The Colorado potato beetle is moderately abundant - more plentiful generally than in 1930.

Indiana

J. J. Davis (July 25): The potato beetle was abundant on potato at Hartford City and Warsaw the last of June. The potato beetle killer Perillus bioculatus Fab. was observed commonly attacking potato beetle larvae at Logansport (June 25) and Elkhart (July 15).

Minnesota

A. G. Ruggles and assistants (July): The Colorado potato beetle is quite generally abundant throughout the State, reports of heavy infestations coming from practically all sections. (Abstract, J.A.H.)

North Dakota

J. A. Munro (July 18): The Colorado potato beetle is more abundant this season than usual. It is reported from 15 counties.

Oklahoma

C. E. Sanborn and assistants (July 22): The Colorado potato beetle is very abundant -- worse than for a number of years.

Mississippi

J. Milton (July 21): The Colorado potato beetle has been very abundant on potatoes and tomatoes for the last several weeks in Alcorn County.

Montana

R. W. Gjullin (June 30): The Colorado potato beetle is very abundant in Park County.

Colorado

C. P. Gillette (July 22): The Colorado potato beetle is moderately abundant in the northern part of the State.

Idaho

C. Wakeland (July 23): The potato beetle is generally distributed in several localities in southwestern Idaho and in the entire potato-growing part of northern Idaho. The insect appears to be only partially two-brooded in southern Idaho.

Utah

G. F. Knowlton (July 17): Mr. LeRoy Marsh discovered an infestation on one city lot and a part of another lot in Ogden about June 20. Effort has been made to eradicate this pest in this area. (July 25): It is apparently almost eliminated now at Ogden.

#### POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): This beetle seems to be quite generally prevalent and unusually injurious in western New York this year. The injury lasted into early July.

Indiana

J. J. Davis (July 25): Potato flea beetles were reported abundant on potato at Thorntown previous to July 11.

North Dakota

J. A. Munro (July 18): Potato flea beetles are moderately abundant in LaFoure and Cass Counties.

South Dakota

H. C. Severin (July 14): Flea beetles of several species are attacking garden crops such as potato, tomato, cabbage, turnips, radishes, beets, etc.

Nebraska

M. H. Swenk (July 1 - 15): In Dodge County potato fields were being injured rather severely during the second week in July.

Colorado

C. P. Gillette (July 22): The potato flea-beetle is very abundant in the Greeley area but not in other sections.

POTATO APHID (Illinoia solanifolii Ashm.)

Connecticut

D. Lacroix (July 22): A heavy infestation of this plant louse was found on about 5 acres of potatoes in Tariffville. An examination of the field showed a severe yellowing of some old growth and curling of new leaves.

New Jersey

Weekly News Letter, N. J. State Coll. Agr. (July 7): Lice on tomatoes are causing some damage in Burlington County.

Ohio

N. F. Howard (July 11): At Cincinnati potato aphids were becoming abundant on early potatoes and tomatoes.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Ohio

T. H. Parks (July 21): Early planted potatoes have become seriously infested since the middle of June. Hopperburn has put in its appearance and this disease coupled with dry weather has seriously affected the prospects for a high potato yield. Bordeaux-sprayed fields are holding up well and showing little injury. Bean plantings on the University farm show serious injury from this leafhopper. The plants are stunted and the leaves distorted as a result of its feeding.

Indiana

J. J. Davis (June 29): The potato leafhopper was abundant on potato at Thorntown.

Illinois

C. C. Compton (July 20): The potato leafhopper is inflicting the usual severe injury to potatoes and beans in Cook County.

Kentucky

W. A. Price (July 24): The potato leafhopper is very abundant.

Minnesota

A. G. Ruggles and assistants (July): The potato leafhopper is quite generally reported from all parts of the State as below normal in abundance, but four counties (Aitkin, Benton, Lake, and Blue Earth) reported it as abundant enough to attract attention. (Abstract, J.A.H.)

Iowa

H. E. Jaques (July 24): The potato leafhopper is very abundant in 14 counties scattered throughout the State.

TARNISHED PLANT BUG (Lygus pratensis L.)

New York

N. Y. State Coll. of Agr., Weekly News Letter, (July): The tarnished plant bug is unusually prevalent in potato fields:



western New York, the damage having been particularly noticeable during the second week in July.

aska M. H. Swenk (July 1): In Hall and Buffalo Counties the tarnished plant bug was reported as very plentiful on potato plants, and doing damage June 18 to 22.

ho C. Wakeland (June 30): Injury from the tarnished plant bug is more prevalent in potato vines than we have ever noticed it before. Injury takes the form of wilted terminals and blossoms which later turn black.

POTATO TUBER WORM (Phthorimaea operculella Zell.)

rida J. R. Watson (July 24): This insect was sent in from Fort Myers, where it was doing considerable damage to potatoes in storage.

E. W. Berger and G. B. Merrill (July 23): The potato tuber moth is very abundant on potatoes in storage at Kissimee and Lake Worth.

TOMATO WORM (Protoparce sexta Johan.)

Jersey N. J. State Coll. Agr., Weekly News Letter (July): Green tomato worm outbreaks are being reported from Cumberland and Camden Counties.

ylond E. N. Cory and assistants (July 17): The tomato hornworm has been extremely injurious in Anne Arundel, Baltimore, Caroline, Kent, and Dorchester Counties. One field of 75 acres in Caroline County had as high as 15 worms per plant and a large portion of the early fruit was destroyed. One field in Dorchester County had four acres of early tomatoes so heavily infested that they had to be ploughed down.

lana J. J. Davis (July 25): Tomato worms reported very destructive to tomatoes throughout the State.

TOMATO STILT BUG (Jalysus spinosus Say)

th Carolina L. B. Reed (July 16): The tomato stilt bug was found on this date causing serious damage to tomatoes in one garden. Almost the entire crop was being destroyed.

TOMATO PSYLLID (Paratrioza cockerelli Sulz.)

prado C. P. Gillette (July 22): The tomato psyllid is moderately abundant in the Greeley area, causing considerable damage to potatoes in some fields.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- Massachusetts      A. I. Bourne (July 25): The Mexican bean beetle is spreading over a larger area than at this time in 1930.
- Rhode Island      A. E. Stone (July 29): Mexican bean beetles have been reported on good authority from several sections of the State. Larvae have been sent in from Washington County but so far no adults have been captured.
- Connecticut      E. E. Tucker (July 9): The Mexican bean beetle was first reported attacking shell beans at Vernon. Damage is slight to date.  
R. E. Wing (July 21): The Mexican bean beetle was found on string beans on two places at Woodstock and Putnam, within the week.  
N. Turner (July 21): The first generation caused serious damage to beans in the southern half of the State. Adults started flying July 10, and no second-generation eggs have been found to date. Adults emerged about a week later in the northern part of the State. First-generation injury was spotted but in general quite severe. Several growers lost their early beans entirely. The more severe damage is occurring from 100 to 300 feet above sea level.  
D. LaGroix (July 21): This is the first infestation of the Mexican bean beetle I have seen in Windsor. It is a small one.
- New York      N. Y. State Coll. Agr., Weekly News Letter (July 8): For the first time, I believe, the Mexican bean beetle has been found in Esopus and Port Ewen. This pest was found in the larval and pupal stages.
- New Jersey      A. M. Caudell (July 13): I saw a bean patch of an acre or so completely destroyed by the Mexican bean beetle. All are gone from the field except a few pupae.  
N. J. State Coll. Agr., Weekly News Letter (July 14): The Mexican bean beetle is still very prevalent throughout Morris County. There are very few fields of beans that have not been attacked by it. (July 21): From Hunterdon County many requests are being received concerning the control of the Mexican bean beetle.
- Pennsylvania      T. L. Guyton (July 27): The Mexican bean beetle is scarce in the eastern part of the State.

Delaware

L. A. Stearns (July 22): The second brood of the Mexican bean beetle is generally severe throughout the State.

Maryland

E. N. Cory and assistants (July 17): The Mexican bean beetle is on the increase, first adults of the second generation occurring.

Ohio

J. T. Houser (July 10): The Mexican bean beetle is moderately abundant, and is much more plentiful than in 1930.

Indiana

J. J. Davis (July 25): The Mexican bean beetle has been reported frequently from June 17 to date as follows: Bedford, Mitchell, Salen, Cloverdale, Greencastle, Bloomington, Danville, Terre Haute, Bridgeton, Rockville, and Anderson. The county agent of Monroe County reports that during June he received over 125 telephone calls about insects and over half were regarding the Mexican bean beetle.

Colorado

C. P. Gillette (July 22): The Mexican bean beetle is very abundant on the eastern and western slopes.

#### BEAN APHID (Aphis rumicis L.)

Connecticut

N. Turner (July 1): Moderately heavy infestation on bush and pole limas. Some growers have had no trouble from this aphid for several years.

#### LIMA BEAN VINE BORER (Monoptilota pergratialis Hbst.)

North Carolina

W. A. Thomas (July 18): This insect is much more numerous in the vicinity of Chadbourne than it has been in the past eight years. Growers of home gardens complained of the injury of this insect.

#### BEAN THRIPS (Heliothrips fasciatus Perg.)

Mississippi

J. M. Langston and assistants (July 21): There is a very heavy infestation of thrips, causing blooms of pole beans, bunch beans, and butter beans to fall. Practically no fruit is setting. Complaints have come in from several places in Union, Lee, Itawamba, and Pontotoc Counties.

California

S. Lockwood (July 27): On the 15th day of July there was discovered an insipient infestation of bean thrips on about 20,000 acres of cotton in the Dos Palos -- Los Banos area of the San Joaquin Valley in California. At that time adult thrips averaged over this area about one thrip to the plant and at this time the larvae were found numerous only in rather small areas of this region. No commercial damage had occurred, though there is promise of considerable to come.



PEAS

PEA APHID (Illinoia pisi Kalt.)

- New York      Weekly News Letter, State Coll. of Agr., (July): The pea aphid is causing considerable damage to the pea crops in the Collins and Springville sections.
- Michigan      R. H. Pettit (July 10): Practically the entire canning pea crop in the eastern part of Michigan has been ruined by the pea aphid. The attack developed suddenly as usual, and was not noticed by the growers until too late to do any effective work.

\*      GREEN CLOVER WORM (Plathypena scabra Fab.)

- Nebraska      M. H. Suenk (July 1): Garden peas were seriously damaged in several localities during the last week in June by the green clover worm, which seems to be present in unusual numbers this year.

CABBAGE

CABBAGE WORMS (Pieris rapae L.)

- New Jersey      Weekly News Letter, State Coll. of Agr., (July 14): Considerable trouble with cabbage worms was reported from Mercer County.
- Ohio      T. H. Parks (July 21): The imported cabbage worm is very abundant.
- Illinois      C. C. Compton (July 15): The imported cabbage worm is unusually abundant for this season of the year at Des Plaines. Pupation of the first brood is well along and the percentage of parasitism is low.
- Kentucky      W. W. Price (July 24): The imported cabbage worm is moderately abundant.
- Minnesota      A. G. Ruggles (July): The imported cabbage worm is very abundant and doing more damage than usual in several points in Winona, Lac Qui Parle, Lyon, Houston, and Martin Counties. (Abstract, J.A.H.)
- Kansas      H. R. Bryson (July 23): The imported cabbage worm is very abundant.

North Dakota

J. A. Munro and assistants (July): The imported cabbage worm is moderately abundant in Barnes, Williams, and Ramsey Counties and is scarce in Golden Valley, the moths just showing up. Apparently it is not causing a great amount of injury in any of these counties. (Abstract, J.A.H.)

Nebraska

H. E. Jaques (July 24): The imported cabbage worm is reported as very abundant in 24 counties scattered over the State.

Nebraska

M. H. Swenk (July 20): The imported cabbage worm is very abundant -- more troublesome than usual.

#### CABBAGE LOOPER (Autographa brassicae Riley)

Illinois

C. C. Compton (July 15): During the past week egg deposition has been heavy at Des Plaines. Many fields show from 4 to 10 eggs per plant over the entire field.

North Dakota

J. A. Munro (July 18): The cabbage looper was noticed on cabbage in the vicinity of Fargo.

#### DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Connecticut

A. E. Wilkinson (July 20): Reported attacking cabbage and cauliflower at Westport, Fairfield, Easton, Trumbull, Danbury, Bridgeport, Brookfield, Thomaston, Morris, New Milford, Salisbury, Norfolk, Canaan, Vernon, Coventry, Ellington, Enfield, Windsor, Berlin, Rocky Hill, and Newington.

#### THE HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

Arizona

C. D. Lebert (July 28): Severe damage to cauliflower at Ft. Huachuca, July 14.

#### CABBAGE MAGGOT (Hydomyia brassicae Bouche)

Montana

R. W. Gjullin (May 30): The cabbage maggot is very abundant in Ravalli County.

Wisconsin

E. L. Chambers (July 21): Cabbage and cauliflower throughout the State suffered severely from maggot attack where control measures were not being attempted.

#### STRAWBERRY

##### STRAWBERRY WEEVIL (Anthonomus signatus Say)

New York

N. Y. State Coll. of Agr., Weekly News Letter (July): Several growers are having considerable trouble with strawberry weevils in Erie County.

STRAWBERRY CROWN GIRDLER (Brachyrhinus ovatus Say)

- Maine H. B. Peirson (July 22): Strawberry crown girdler adults were observed at Winter Harbor, June 5.
- Pennsylvania J. N. Knull (July 12): This weevil is very abundant on the Mont Alto State Forest at the present time. The adults can be found on weeds and low vegetation.
- Minnesota A. G. Ruggles and assistants (July): The strawberry root weevil did serious damage during June to large areas of young evergreens at Newport and Owatonna, and during July was reported from Crookston, Virginia, Duluth, and Askov. (Abstract, J.A.H.)
- Idaho C. Wakeland (July 23): The strawberry root weevil is generally distributed throughout northern Idaho and causing rather severe injury. Some work is being done in control by the use of poisoned bait.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

- New York N. Y. State Coll. of Agr., Weekly News Letter (July): Rose leaf beetles have done considerable damage during the month to fruits of all kinds, including strawberries, in the lower Hudson River Valley. (Abstract, J.A.H.)

STRAWBERRY ROOT WORM (Paria canella Fab.)

- North Carolina L. B. Reed (July 23): On this date the species was found causing considerable injury to strawberry foliage in one field.

STRAWBERRY CROWN BORER (Tyloclerma fragariae Riley)

- Connecticut E. E. Tucker (July 1): Plants died when the berries were about half grown. Holes in the crowns of many. The soil looked to have had lots of earthworms present. Damage was 10 to 75 per cent. (Report of C. H. Tryon.)

WHITEFLY (Trialeurodes packardii Morr.)

- New York N. Y. State Coll. of Agr., Weekly News Letter (July): A rather unusual condition developed in Ulster and Dutchess Counties early in the month. White flies were very seriously infesting strawberries.
- North Carolina L. B. Reed (July 23): The strawberry whitefly infestation has been general in the Chadbourn district during July.



STRAWBERRY LEAF ROLLER (Ancylis comptana Frohl.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (July 21): There are still a few reports coming in of the strawberry leaf roller from Cumberland County.

Delaware

L. A. Stearns (July 23): Infestation is severe in many plantings in the vicinity of Bridgeville.

STRAWBERRY CROWN MOTH (Aegeria rutilans Hy. Edw.)

Oregon

D. C. Mote (July 13): K. Gray reports that the peak of emergence has nearly been reached. Eggs were laid June 5 and first eggs hatched June 19. Third-generation parasites of the crown moth are in the larval stage.

STRAWBERRY ROOT APHID (Aphis forbesi Weed)

North Carolina

L. B. Reed (July 17): The strawberry root louse almost disappeared from the foliage of strawberries during the hot dry days of June but following the rains of July has increased in abundance. The root infestation has been high during the entire period.

CUCUMBERS

PICKLE WORM (Diaphania nitidalis Stoll)

North Carolina

W. A. Thomas (July 17): The first larvae of the season were observed boring into summer squash. Apparently they are about two-thirds grown. A single adult of this species has emerged in the hibernation cage at the laboratory.

Florida

J. R. Watson (July 24): The melon worm and the pickle worm seem to be less abundant than usual at this season of the year in the Gainesville section.

Mississippi

State Plant Board (June 29): Cucumbers are being injured by the pickle worm in several localities. This insect is about two weeks later than usual at the A. & M. College.

J. M. Langston and assistants (July): The pickle worm is reported as doing considerable damage to cucumbers and canteloupes in Stone, Forrest, Marion, and Pearl River Counties. (Abstract, J.A.H.)

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Minnesota

H. B. Peterson (July 22): The striped cucumber beetle first appeared in West Dresden June 13.

Connecticut

D. S. Lacroix (June 30): Squash and cucumbers have been rather severely attacked by this insect around Windsor. It is more abundant this June than a year ago.

Pennsylvania

H. N. Worthley (July 9): The striped cucumber beetle is moderately abundant at State College. First beetles appeared June 23.

North Carolina

W. A. Thomas (July 16): These insects have destroyed the petals of nearly all the flowers on a plot of watermelons near Chadbourne. The leaves, especially near the base of the plants, show evidence of earlier attacks by this insect.

Florida

J. R. Watson (July 24): The striped cucumber beetle is very abundant in the Everglades only.

Indiana

J. J. Davis (July 25): The striped cucumber beetle has been normally abundant, reports from June 21 to July 16 coming from Indianapolis, Clinton, Bloomington, Geneva, Kokomo, Rensselaer, Knox, Lafayette, Brinfield, Campbellsburg, and Leesburg. At the last three places especial reference was made to damage by the larvae.

Kentucky

W. A. Price (July 24): The striped cucumber beetle is very abundant.

Ohio

N. F. Howard (June): At Columbus, Marietta, and Gallipolis the striped cucumber beetle has been very numerous and injurious.

Iowa

H. E. Jaques (July 24): The striped cucumber beetle is very abundant in 16 counties in various sections of the State.

Nebraska

M. H. Swenk (July 20): The striped cucumber beetle is very abundant -- more troublesome than usual.

Kansas

H. R. Bryson (July 23): The striped cucumber beetle is very abundant wherever cucumbers, melons, and squashes are grown.

Illinois

C. C. Compton (July 20): The striped cucumber beetle has been very destructive to cucumbers, melons, and squash. Melons were still suffering from attack, July 15.

North Dakota

J. A. Munro (July 18): The striped cucumber beetle was unusually abundant and injurious during the latter part of June and in early July in Golden Valley, LaMoure, Williams, Kidder, Burke, Burleigh, Grand Forks, Dickey, Barnes, and Cass Counties.

Iowa

C. N. Ainslie (July 7): The presence of the cucumber beetle in destructive numbers seems to be universal in this region this year.

Minnesota

A. G. Ruggles and assistants (July): The striped cucumber beetle is unusually abundant and destructive over the southern half of the State, from Chisago, Hennepin, Benton, and Stevens Counties southward. (Abstract, J.A.H.)

Nebraska

M. H. Swenk (July 1 - 15): During the first half of July distinctly more than the usual number of reports of damage by this insect were received.

Oklahoma

C. E. Sanborn and assistants (July 23): The striped cucumber beetle is very abundant.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica ~~soror~~ Lec.)

Oregon

D. C. Mote (July 13): T. R. Chamberlin reports that in the laboratory at Forest Grove the first adults of the new generation were obtained on June 8. These came from eggs laid during the last half of March and were reared entirely on wheat seedlings. In the field near Forest Grove adults of the new generation began issuing during the third week of June. The beetles were fairly common by June 23, when they were concentrating on wild cucumber, males outnumbering females 30 to 1. Larvae from eggs laid during the last half of May on overflow land in canary grass and in Polygonum seedlings were from about one-half to full grown on June 24. None had pupated. (July 13): E. G. Thompson reports the summer brood almost all emerged and doing considerable damage to canning beans and other crops. A parasite, Celatoria diabrotica Coq., is beginning to appear in considerable numbers.

MELON APHID (Arhis gossypii Glover)

Virginia

G. E. Gould (July 24): In some fields in the Norfolk area the melon aphid is quite abundant and causing some damage. Severe infestations were noticed on cucumber and canteloupe.

SQUASH BORER (Melittia satyriniformis Hbn.)

Wa

C. M. Ainslie (July 22): The squash borer is very common this summer. At times several larvae infest a single plant. It has been a number of years since such an outbreak has occurred. The damage has been large.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Pennsylvania

H. N. Worthley (July 9): The beetle made its first appearance on June 23 at State College. It is scarce.

Florida

J. E. Watson (July 24): The beetle is very abundant, especially in the Everglades.



Damage by

Wisconsin

E. L. Chambers (July 21): / This insect has been more severe than usual to corn and beans in Wisconsin this summer. Several large fields of string beans were completely riddled by the pest in Jefferson County.

Oklahoma

C. E. Sanborn and assistants (July 22): The spotted cucumber beetle is very abundant.

Mississippi

J. M. Langston and assistants (July): Moderately abundant during the early part of the month. Later in the month it was reported doing damage to late plantings of truck in Lauderdale County. (Abstract, J.A.H.)

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

South Carolina

J. N. Tenhet (July 16): The southern green stink bug is very abundant this season and is associated with the squash bug on watermelons and cantaloupes.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Pennsylvania

H. N. Worthley (July 22): The squash bug is very abundant at State College this year. Nymphs from the first to the third instars, eggs, and adults are very plentiful.

Virginia

H. G. Walker (July 24): The first generation is becoming full grown and considerable damage is being done in several fields.

South Carolina

J. N. Tenhet (July 16): The squash bug is unusually abundant on watermelons and canteloupes. (July 25): O. L. Cartwright reports, July 8, "Squash bugs causing severe damage to cucumbers and watermelons, cucumber patch completely destroyed. Some melon plants dead also. In each case squash planted near by had been killed."

Georgia

O. I. Sharp. (June 25): Squash bugs are unusually abundant and have caused considerable damage to watermelon vines in middle and southern Georgia.

Iowa

C. M. Ainslie (July 22): This pest seems to have multiplied this summer and is ruining gardens and even farm plantings. No control measures seen adequate to prevent serious damage.

Missouri

D. Isely (July 23): While the squash bug is moderately abundant each year, its numbers and destructiveness are much greater than usual.

Alabama

J. M. Robinson (July 23): The squash bug is very abundant on watermelon vines at Troy, Palos, Auburn, and Clanton.

Mississippi

J. M. Langston and assistants (July): Complaints of injury by this insect have been received from various sections of the State throughout the month. Aside from their damage to cucurbits they have been doing damage to ripe plums and tomatoes. (Abstract, J.A.H.)

Idaho

C. W. England (June 30): The squash bug, discovered in Idaho for the first time in 1929, has increased and spread until we are receiving many inquiries from southwestern Idaho concerning control measures.

Utah

G. F. Knowlton (July 2): Squash bugs are abundant and doing serious damage in Utah County.

### ONIONS

#### ONION THRIPS (Thrips tabaci L.)

Colorado

C. P. Gillette (July 22): The onion thrips is moderately abundant in the Arkansas Valley.

Indiana

J. J. Davis (July 25 ): Reports received from inspectors indicate 50 per cent damage to the onion crop in northern Indiana by thrips and drought.

#### ONION MAGGOT (Hylemyia antiqua Meig.)

Minnesota

A. G. Ruggles and assistants (July): The onion maggot is very abundant on all onions, cabbage, and radishes. (Abstract, J.A.H.)

### SWEETPOTATO

#### SWEETPOTATO SAWFLY (Sterictiphora collaris Say)

Virginia

G. E. Gould and H. G. Walker (July 16): The sweetpotato sawfly is slightly more abundant this year than last in the infestation near Munden in Lower Princess Anne County. Even though larvae were found in several new fields this year, the infestations are very light and little damage is apparent. The adult sawflies and the parasite flies, Schizocerothrips leiby Towns., are now emerging.

ARGUS TORTOISE BEETLE (Chelymorpha cassidea Fab.)

Mississippi

J. M. Langston (June 16): Inspector R. D. Deen sent us larvae from Shannon with the report that a small area in an acre of sweetpotatoes was stripped of leaves by these insects.

HORSERADISH

DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

New Jersey

N. J. State Coll. of Agr., Weekly News Letter (July 17): The larvae of the diamond-backed moth have become tired of the diet of cabbage and are attacking plantings of horseradish, in Monmouth County.

SPINACH

EGGPLANT LACEBUG (Gargaphia solani Heid.)

Virginia

G. E. Gould (July 24): The eggplant lacebug is causing considerable damage to eggplants in the Norfolk district.

EGGPLANT LEAF MINER (Phthorimaea glochinella Zell.)

Virginia

H. G. Walker and G. E. Gould (July 24): The eggplant leaf miner was observed to be abundant in several fields in the Norfolk district. In one field examined every plant had at least a few larval mines in the leaves; some plants showed severe injury while several others were practically dead.

RED SPIDER (Tetranychus telarius L.)

Virginia

H. G. Walker and G. E. Gould (July 24): Red spiders were found to be very numerous on eggplants in a field near Norfolk. They were causing slight damage.

BEETS

BEET WEBWORM (Loxostege sticticalis L.)

North Dakota

J. A. Munro (July 18): The beet webworm has been active in nearly all the counties bordering the Red River Valley. Moths from the first brood are appearing. It has been very injurious to beets and also reported as feeding on Russian thistle and a few species of garden plants.

Montana

R. W. Gjullin (June 30): Sugar beet webworms are very abundant. Distribution is general.



C. L. Corkins (July 20): The most interesting insect outbreak of the past month has been that of the sugar beet webworm. This insect has been present in outbreak numbers particularly in the north central area of the State. The unusual and, to me, entirely new condition was the migration of the worms into commercial bean fields where serious damage was done. This bean-field infestation seems to be secondary, rather than primary, as we know of no instance where moths laid eggs in the bean fields. Apparently the only danger to beans occurs when fields accidentally lie in the path of migration. Then the beans seem to be a very acceptable food. We shall be interested to know if other entomologists in the sugar-beet webworm area have observed this phenomenon.

BEET LEAFHOPPER (Eutettix tenellus Bak.)

G. F. Knowlton (July 25): The beet leafhopper is moderate to very abundant in the northern part of the State. Some areas have been severely damaged in northern Utah.

C. F. Gillette (July 22): The beet leafhopper is scarce. There are practically none.

SUGAR BEET ROOT MAGGOT (Tetanops aldrichi Hendel)

G. F. Knowlton (July 10): Tetanops aldrichi Hendel has seriously damaged sugar beets in several fields at Trenton.

TOBACCO

SOD WEBWORMS (Crambidae)

D. S. Lacroix (June 27): Larvae of a crambid were very abundant on one tobacco plantation in Windsor. This is the first damage to this crop that I have seen. The same or a closely allied species was found seriously girdling asters in Windsor on the same date. In both cases the land was in hay or wild grasses last year.

CUTWORMS (Noctuidae)

D. S. Lacroix (July 20 -- 21): Three serious infestations of these cutworms (probably Agrotis c-nigrum L.) have developed in the last few days. In each case the worms attacked tobacco near fields of timothy which had just been cut, and in every case the timothy was sowed last year. As many as 35 to 50 larvae could be picked up under one tobacco plant. The tobacco infested is broad leaf.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida            F. S. Chamberlin (July 2): Dry weather continues to favor thrips increase and severe damage is occurring in cigar wrapper crops.

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina    Z. P. Metcalf (July 21): The tobacco flea beetle is very abundant over the whole State.

Kentucky           W. A. Price (July 24): The tobacco flea beetle is very abundant and doing much damage to tobacco at Ribolt, Flemingsburg, Winchester, Lexington, and Nicholasville.

Oklahoma           C. E. Sanborn and assistants (July 22): The tobacco flea beetle is scarce.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

SADDLED PROMINENT (Heterocampa guttivitta Walk.)

sachusetts      J. V. Schaffner, Jr. (July 23): Mr. C. E. Hood reports that woodland defoliation by this species is beginning to show up in the Berkshires.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

nsylvania      J. N. Knull (July 24): There have been numerous complaints of the bagworm doing damage to evergreens and broadleaf trees in Franklin County.

yland      E. N. Cory and assistants (July 17): Bagworms are quite generally abundant throughout the State.

L. Bash (July 20): This species is seriously defoliating evergreens on the estate of General Louis Bash in northwestern Washington, D. C.

mont      G. T. French (July 21): Many people are sending in the bagworm this month. It seems to be unusually common and destructive and is attacking not only evergreens but certain broad-leaved trees and shrubs as well. We have seen one or two pussy willow trees nearly defoliated recently.

ginia      H. G. Walker and G. E. Gould (July 24): Several cases of moderate injury by bagworms on evergreens have been brought to our attention, both in and around Norfolk and on the Eastern Shore.

o      E. W. Mendenhall (July 17): The bagworm is quite bad on arborvitae and Norway maples in some localities in Dayton. The trees are stripped of their leaves before the owners notice the damage. Reported from Springfield, Columbus, and Dayton.

th Carolina      Z. P. Metcalf (July 21): The bagworm is more abundant and destructive than I have seen it in 20 years.

CECROPIA MOTH (Samia cecropia L.)

th Dakota      J. A. Munro (July 18): Cecropia caterpillars are causing injury to trees in Golden Valley and Adams County.

ELM SPANWORM (Ennomos subsignarius Hbn.)

nsylvania      J. N. Knull (June 24): There has been an extremely heavy infestation of this worm in the vicinity of Edgemere. Practically all of the species of forest trees in that vicinity show some feeding. Many of them have been entirely defoliated. About 50 per cent of the moths had emerged on July 4.



ASH

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

Pennsylvania

J. N. Knull (July 15): A 6-acre plantation of green ash is heavily infested with the oyster-shell scale. Many trees have been killed.

A CHRYSOMELID (Oedionychis sexmaculata Ill.)

Maryland

E. N. Cory and assistants (July 17): Quite numerous at College Park; 75 to 100 per cent of the ash leaves on many trees damaged.

CARPENTER WORM (Prionoxystus robiniae Peck)

Ohio

E. W. Mendenhall (July 13): One hundred and nineteen ash trees on the Ohio State Fair grounds are badly affected with the carpenter worm and I also find it in other sections of the city.

Nebraska

M. H. Swenk (July 1): In the central part of the State quite a bit of trouble with larvae of the carpenter moth boring in ash and poplar trees has been reported.

BEECH

A BEECH SKELETONIZER (Psilocorsis faginella Chamb.)

Maine

H. B. Peirson (July 22): The beech leaf skeletonizer was reported at Lucerne, July 3. Moths were flying.

BIRCH

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

Maine

H. B. Peirson (July 22): Moths of the birch leaf skeletonizer were flying on July 3 at Jackman.

BIRCH LEAF MINER (Phyllotoma nemorata Fall.)

New Hampshire

Monthly Letter of the Bureau of Entomology, U.S.D.A. (June): A small colony of adults belonging to the genus Tranosema was put out at North Conway, N. H., on June 16. This hymenopterous parasite of Phyllotoma nemorata Fall., a leaf-mining sawfly on birch, was received from Austria during the past winter.

A CASE BEARER (Coleophora salmani Heinr.)

Maine

A. E. Brower (July 10): Injury by the recently described Coleophora salmani Heinr. is very severe on young birch and alder in places on Mt. Desert Island, especially along the east coast.

BIRCH LEAF MINER (Fenusa pumila Klug)

H. B. Peirson (July 22): On July 15 this species was not so abundant as last year but can be found everywhere.

J. N. Knull (June 23): Gray birches through Pike County are heavily infested with this sawfly.

E. W. Mendenhall (June 17): Some imported birch leaf-miners were found affecting birch leaves in nurseries at Painesville.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

J. J. Davis (July 11): Boxelder bugs were annoying in a dwelling and outbuildings at Rensselaer July 11. In the material sent a few were mature but most of them were immature.

J. A. Munro (July 18): The boxelder bug is reported as prevalent in boxelder groves in Hettinger, Burleigh and Dickey Counties.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

H. C. Severin (June 26): This species, chiefly on boxelder, is in many sections of the State.

BOXELDER LEAF ROLLER (Gracilaria negundella Chamb.)

C. P. Gillette (July 22): The leaf roller is very abundant in Weld County, especially about Greeley.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

E. N. Cory and assistants (July 17): Ceratomia catalpae is generally abundant throughout the State.

J. N. Knull (July 22): Numerous trees in a plantation have been defoliated by this insect. There is some parasitism.

CYPRESS

CYPRESS BARK SCALE (Ehrhornia cupressi Ehrh.)

E. W. Mendenhall (July 13): Cypress trees on private property are quite generally infested with the cypress bark scale.

ELM

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

- Maine H. B. Peirson (July 22): The elm bark louse is abundant in the vicinity of Augusta.
- Maryland E. N. Cory and assistants (July 17): The European elm scale is reported at Towson.
- Ohio E. W. Mendenhall (July 12): The European elm scale is spreading very fast on the American and other elm trees in Grandview and upper Arlington, Columbus, Ohio. The scale is so bad that many of the trees show injury and in some cases the trees are dying on account of this pest. Very little in this section is done to combat this pest. (July 18): I found an outbreak of the European elm scale on American elms near Reynoldsburg, Franklin County. Some of the limbs are dying on account of this scale.
- Utah G. F. Knowlton (July 21): The European elm scale has caused considerable damage in northern Utah during the present year.

ELM CASE BEARER (Coleophora limosipennella Dup.)

- Pennsylvania J. N. Knull (July 5): Several American elms 2 miles south of Dingman's Ferry, Pike County, are nearly defoliated by this insect.

MOURNING-CLOAK BUTTERFLY (Aglais antiopa L.)

- Maine H. B. Peirson (July 22): There was a light infestation of the spiny elm caterpillar in Augusta June 15.
- Pennsylvania H. N. Worthley (July 9): Several reports of unusual abundance of the spiny elm caterpillar have been received.
- Maryland E. N. Cory and assistants (July 17): This insect is very numerous, attacking many trees in the vicinity of College Park.
- Nebraska M. H. Sventk (July 1 - 15): In Keith County, at Ogallala, the leaves of the elm trees were being rather severely eaten during the second week in July by the spiny elm caterpillar.

ELM COCKSCOMB GALL (Colophila ulmicola Fitch)

- Maine H. B. Peirson (July 22): The elm cockscomb gall was very abundant for the first time in years, especially near Augusta on July 15.



Pennsylvania

E. P. Felt (July 21): The cockscomb elm gall was reported as very badly infesting an elm at Philadelphia.

Nebraska

M. H. Swenk (July 1): In Washington County the elms have had more than the usual infestation with the cockscomb elm gall.

ELM LEAF BEETLE (*Galerucella xanthomelaena* Schr.)

New Hampshire

L. C. Glover (July 22): The elm leaf beetle is very abundant in the towns of Exeter, Newfields, Greenland, Stratham, Dover, and Rochester,

Massachusetts

and

New Hampshire

J. V. Schaffner, Jr. (July 21): Various reports of injury to elms by this pest are being received from many localities in eastern Massachusetts and southern New Hampshire. Mr. C. E. Hood has reported the elm leaf beetle as abundant in southeastern New Hampshire and also in towns south of Boston, especially in sections around Dighton.

Connecticut

D. S. Lacroix (July 7): Elms along the highway through East Windsor Hill and South Windsor are very badly browned by the attack of this pest. Elms stand out against the foliage of maples as though the former had been singed by fire or were suffering from severe drought. Around Windsor elms are not so badly infested as last year, probably because of spray applications.

W. E. Britton (July 17): Unsprayed trees in East Windsor, South Windsor, Glastonbury, Middletown, Durham, Plainfield, Newtown, and many other places are now brown. I saw no injury at higher elevations in Litchfield, Goshen, Cornwall, and Salisbury a week ago.

New York

N. Y. State Coll. of Agr., Weekly News Letter (July 20): The elm leaf beetle is causing severe damage in sections of Catskill village, Greene County. Some elms are almost completely defoliated. (E. G. Droughan)

Delaware

L. A. Stearns (July 22): The elm leaf beetle is very active. There is considerable injury on elms along the highway north of Wilmington today.

Maryland

E. N. Cory and assistants (July 17): There is a rather general outbreak of this insect in the vicinity of College Park.

Ohio

E. W. Mendenhall (July 15): There are some outbreaks of the elm leaf beetle in Dayton.

Kentucky

W. A. Price (July 24): The elm leaf beetle has defoliated many trees in Lexington.

FIR

FIR BARK BEETLE (Scolytus ventralis Lec.)

Idaho

J. C. Evenden (July 22): Throughout the range of the grand fir, a very heavy loss is occurring from the attacks of this insect. Many trees of high aesthetic value around summer home resorts, etc., have been destroyed.

A BUDWORM (undetermined)

Oregon

J. A. Deal (July 13): A budworm was found feeding heavily on the white fir, Douglas fir, and larch in the Wildwood camp ground on the Ochoco National Forest. Supervisor Kuhns on the Whitman reports large areas of dead and dying white fir in the vicinity of Halfway. He says the budworms are killing the fir in this area.

JUNIPER

JUNIPER WEBWORM (Dichomeris marginellus Fab.)

New York

A. N. Caudell (July 16): On July 5 at Mineola, Long Island found ornamental evergreens with as much as one-half in some cases entirely dead from injury by D. marginellus. The same conditions were noted in the gardens of the Doubleday Doran Company at Garden City.

E. P. Felt (July 21): The juniper webworm was reported as injuring juniper at Rochester.

JUNIPER SCALE (Diaspis carueli Targ.)

Maryland

E. N. Cory and assistants (July 17): The juniper scale is unusually abundant throughout the State.

LARCH

LARCH SAWFLY (Neodatus erichsoni Hartig)

Maine

H. D. Feirson (July 22): The larch sawfly was moderately abundant in the northern part of the State, July 15.

Massachusetts

Monthly Letter of the Bureau of Entomology, U. S. Dept. of Agr. (June): Two small shipments of adults of Mesoleius tenthredinis Morley were received at the gipsy moth laboratory in June from A. B. Baird, of the Dominion Parasite Laboratory, Belleville, Ontario, Canada. This hymenopterous parasite of the larch sawfly has been introduced from Europe and established in Canada. The adults received at the gipsy moth laboratory have been liberated in larch sawfly infestations in Massachusetts.

Pennsylvania

J. N. Knull (July 16): A large plantation of Japanese larch at Mont Alto is severely defoliated by the larch sawfly. Most of the larvae have spun their cocoons by this date.

#### LARCH CASE BEARER (Collocophora laricella Hbn.)

Maine

H. B. Peirson (July 22): Summer feeding of the larch case bearer following a very severe spring outbreak has been resumed, July 15.

A. E. Brower (July 10): The larch case bearer is very common. A box of branches brought into the laboratory produced hundreds of moths.

New Hampshire

L. C. Glover (July 1): The larch case bearer is very abundant in this State. I have noted its work from Rochester as far north as Littleton.

#### LOCUST

#### ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Kby.)

Pennsylvania

J. N. Knull (July 10): Adults appeared in large numbers and did considerable damage to the foliage of black locust seedlings in the Mont Alto nursery.

#### A LEAF BEETLE (Antipus laticlavus Forst.)

Pennsylvania

J. N. Knull (July 12): The foliage of numerous black locust trees in the vicinity of Pond Bank are badly eaten by the adult of this species.

Nebraska

M. H. Swenk (July 1): In Boyd County, during the third week in June, locust trees were more or less defoliated by the leaf beetle A. laticlavus.



MAPLE

APHIDS (Aphidae)

New Jersey 'N.J. Weekly News Letter, N.J. State Coll. of Agr. (July 7): Aphids are attacking the Norway maples in Monmouth County.

Pennsylvania C. A. Thomas (July 23): The Norway maple aphid (Periphyllus lyri pictus Kess.), noted before as so abundant in the southeastern part of the State in June, has become much less abundant during July and many Norway maples are practically clean of them.

Indiana J. J. Davis (July 25): The Norway maple aphid is common on maples at Lafayette June 26.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

New Jersey N. J. State Coll. Agr., Weekly News Letter (July 7): The cottony maple scale was found on a number of the cutleaf maples in Monmouth County on June 3.

Ohio J. T. Houser (July 10): The cottony maple scale is more abundant than usual.

Indiana J. J. Davis (June 25): The cottony maple scale was reported abundant at Fountain City, Red Key, Michigantown, and Marion, June 23 to July 7. Those from Fountain City were hatching when received June 24.

Wisconsin E. L. Chambers (July 21): The cottony maple scale was found to be doing serious injury to soft maple and box elder trees in all of the cities and villages along the shore of Lake Michigan and throughout the southern half of the State. Many trees were being killed outright and many others seemed doomed by an unusually severe infestation.

North Dakota J. A. Munro (July 18): The cottony maple scale is fairly common at Fargo, Cass County, and a specimen was received from Williston, Williams County.

Idaho C. Wakeland (June 30): Young of the cottony maple scale are just emerging and are very numerous on maples and various other ornamentals in southern Idaho.

MESQUITE

A NOCTUID (Melipotis nigrescens G. & R.)

Texas A. Busck (July 2): Dr. Bilsing reports that on a 125-mile trip between San Angelo and College Station all of the mesquite trees were completely defoliated by a lepidopterous larva.

OAK

OAK TWIG PRUNER (Hypermallus villosus Fab.)

Connecticut

R. B. Friend (July): This insect was reported as very abundant on oaks.

A LEAF MINER (Brachys floricola Kerr.)

Mississippi

H. Dietrich (July 20): The leaf-mining larva of this species is very common on the leaves of the turkey oak (Quercus catesbaei) in George County. The large brown blotch mines are very conspicuous. Although many other species of oak are present the larva has never been found in any of them.

FRUIT TREE LEAF ROLLER (Cacoccia argyrospila Walk.)

Wisconsin

E. L. Chambers (July 21): Practically all of the oak trees in central and northern Wisconsin were defoliated this summer by the fruit tree leaf roller. This is the third year in most localities, and the trees are being seriously weakened because of this pest's attack coupled with two very dry growing seasons.

OAK LACE BUG (Corythucha arcuata Say)

Connecticut

E. P. Felt (July 21): The oak lace bug is becoming extremely abundant on white oak leaves in particular, causing a marked discoloration of the foliage which is likely to result in abundant leaf fall.

OAK SCALE (Chionaspis quercus Comst.)

Mississippi

J. M. Langston (July 23): Specimens were collected on live oak at Greenwood Island, near Pascagoula, on July 14 by Inspectors R. P. Colmer and H. Berry. This is the first time this species has been recorded from Mississippi.

JUMPING BULLET GALL (Neuroterus saltatorius Hy. Edw.)

Nebraska

M. H. Szwed (July 1): In the oak woodlands of eastern Sarpy County there is this year an unusual abundance of the jumping oak gall.

PINE

PINE LEAF MINER (Paralechia pinifoliella Charb.)

Pine

H. B. Pearson (July 22): The pitch pine leaf miner was very abundant in York County June 20.)

SPRUCE CONE WORM (Dioryctria reniculella Grote)

Connecticut and Massachusetts E. P. Felt (July 21): A cone moth, probably D. reniculella, infests many pine cones at both Danbury, Conn., and Stockbridge Mass., though it is not so numerous as the pine cone beetle.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina Monthly Letter, Bur. Ent., U.S.D.A. (June): In the vicinity of Asheville there seems to be a scarcity of the southern pine beetle following the heavy attacks of last summer and fall. Natural control of this beetle was believed to have been brought about largely through the premature emergence of beetles last fall resulting from unusually warm weather. Because of unfavorable conditions the broods did not overwinter very successfully. Birds also destroyed large numbers of the developing broods during the fall and winter months.

MOUNTAIN PINE BEETLE (Dendroctonus monticolae Hopk.)

Wyoming J. C. Evenden (July 9): For the past three years a serious effort has been made by the Forest Service to prevent an outbreak from spreading into the Yellowstone National Park and destroying the valuable scenic forests of that region. During the past season these insects were discovered in the southwest corner of the park, and during the past two months nearly all of the infested trees have been treated.

PINE CONE BEETLE (Conophthorus coniperda Schwarz)

Massachusetts and Connecticut E. P. Felt (July 21): The pine cone beetle is locally abundant and causing a considerable drop of pine cones at both Danbury, Conn., and Stockbridge, Mass. It has also entered the small twigs of these infested pines, in some instances killing as much as 20 per cent of the shoots on portions of the tree.

WEEVILS (Curculionidae)

Oregon J. A. Beal (July 13): Severe injury to reproduction and remaining trees has been noticed on the Shevlin and Hixon cutting operations in Bend. Practically all of the new needles have withered and died and on this material no terminal growth is anticipated this year. The injury is undoubtedly due to the feeding of adult weevils. Many Magdalis lecontei Horn and a few Cylindrocopturus weevils were actually found feeding on the new growth. The larger weevils feed by boring through the needle sheath into the base of the newly formed needles. They make a large number of holes from which they suck the sap.



A BARK BEETLE (Ips grandicollis Eichh.)

Mississippi

H. Dietrich (July 20): I. grandicollis has killed apparently healthy young loblolly pine along Thompson's Creek, Greene County. The large trees were cut for piling last spring but some were left lying in the woods. The beetles went through a generation in the logs and then attacked the young growth. The logs have been ruined by the larvae of the pine sawyer.

LESSER EASTERN PINE BARK BEETLE (Pityogenes hopkinsi Sw.)

Wisconsin

E. L. Chambers (July 21): Young white pine and Norway pine trees throughout the northern half of the State that were seriously weakened by drought and the pine bark louse are succumbing in large numbers to this borer which kills the young trees outright in Lacrosse County.

A TWIG BORER (Myeloborus ramipeda Sw.)

Massachusetts

J. V. Shaffner, Jr. (July 23): A plantation of evergreens, mostly white pine, of 30 to 40 years' growth and covering 10 to 12 acres of an estate in Beverly, was reported to be infested by a twig borer, M. ramipeda. We found that 10 to 15 per cent of the twigs on the side branches of the white pine trees, especially along the drives, were infested. Adults were secured July 13 and have been identified by Dr. M. W. Blackman.

PINE BARK APHID (Chermes pinicorticis Fitch)

Pennsylvania

J. N. Knull (July 15): The pine bark aphid is unusually abundant on white pine plantations in various parts of the State this year.

Wisconsin

E. L. Chambers (June): 125,000 seedlings have been destroyed by the pine bark louse.

SCOTCH PINE LECANIUM (Toumeyella nubilaticum P. & McD.)

Wisconsin

E. L. Chambers (July 21): Jack pine trees throughout the northern part of the State are heavily infested with the Scotch pine lecanium where the pest was not present last year. In the areas infested last year only a trace remains owing to the work of predators, although many trees succumbed to the attack of the scale.

A PINE SAWFLY (Neodiprion sp.)

Pennsylvania

J. N. Knull (June 23): Numerous pitch pines in this section are heavily infested with one of the pine sawflies.

POPLAR

COTTONWOOD LEAF BEETLE (Lina scripta Fab.)

Ohio E. W. Mendenhall (July 17): A small outbreak of cottonwood leaf beetle found in Springfield on Carolina poplar.

POPLAR LEAF ROLLER (Cacoecia conflictana Walk.)

Maine H. B. Peirson (July 22): About 43,000 acres of poplar has been defoliated near Skinner and Koldajo. Moths were observed flying on June 23 and larvae are now feeding.

SPRUCE

SPRUCE BUDWORM (Cacoecia fumiferana Clem.)

Wisconsin E. L. Chambers (July 21): Large areas of balsam fir and Jack, Norway, and white pine are being defoliated in Bayfield and Douglas Counties. One area, covering nearly an entire township, has had practically every tree completely defoliated and many have been killed outright.

North Dakota J. A. Munro (July 18): Spruce budworm injury has been fairly common in the vicinity of Fargo and a few reports of injury were received from various sections of the State this season.

Wyoming C. Heinrich (July 9): An outbreak of this insect was first recorded in Cody Canyon in 1926, and since that time the insects have spread over a tremendous acreage, and have already destroyed a large area of Douglas fir. For the past two seasons the Bureau of Entomology has attempted the protection of the scenic timber stands along the roadsides and around the many resorts, summer homes, camp sites, etc., through the adoption of a rather extensive spraying program.

A SPRUCE NEEDLEMINER (Epinotia nanana Treit.)

Maine J. V. Schaffner, Jr. (June 25): Observations made in spruce areas in Cumberland, Sagadahoc, Lincoln, and Knox Counties show that the infestation generally is much lighter than in 1930. The feeding on both the red and white spruce is noticeable through this section, especially close to the seacoast. Of all the examinations made in spruce growths none were found that would average more than 35 per cent defoliated. Many moths observed June 15-18, inclusive, indicate an infestation for 1932.

H. B. Peirson (July 22): A heavy spruce webworm infestation along the Maine coast seems to be gaining headway inland. There was a heavy flight July 7.

A SPRUCE NEEDLE MINER (Taniva albolineana Kearf.)

E. L. Chambers (July 21): Blue spruces and other species were found partially defoliated in many plantings in certain sections of the southeastern portion of the State, and the needles were found to be tunneled by T. albolineana.

SPRUCE GALL APHID (Adelges abietis L.)

H. B. Peirson (July 22): The spruce gall aphid is very abundant in the State this year.

J. N. Knull (July 15): Many Norway spruces in a plantation in Penfield are infested with the spruce gall aphid.

A GALL APHID (Pineus pinifoliae Fitch)

J. V. Schaffner (July 21): P. pinifoliae was noted as abundant on red spruce in many localities through Sagadahoc, Lincoln, and Knox Counties, June 15 to 18 inclusive. The trees looked as if they were laden with cones, some opened and other green-like unripened cones. Many adults were issuing at this time. (Identified by Dr. P. N. Annand.)

PINE CONE BEETLE (Conophthorus coniperda Sz.)

J. N. Knull (July 12): This insect is abundant on the Mont Alto forest this year. Many undeveloped cones are on the ground at the present time.

SYCAMORE

LEAF

SYCAMORE/MINER (Phyllonorycter felinella Hein.)

H. Ryan (June 29): Considerable injury was found from the sycamore blotch miner.

A GELECHIID LARVA (Gelechia desiliens Meyrick)

H. Ryan (June 29): Reports of sycamore blight in the Santa Monica district were checked by field inspections, which indicated that the greater part of the injury was from the larva of a moth feeding on the upper surface of older leaves and on young leaves. Adults were reared. One tree, 4 feet in diameter and about 60 feet tall, had most of the upper two-thirds of the leaves dry, with some green left only on the lower leaves. This was the most severe injury noted, although all of the sycamores in the immediate vicinity were affected. (Determined by A. Busck.)



A SCALE INSECT (Stomacoccus platani Ferris)

California H. Ryan (June 29): Considerable injury was found from the sycamore scale, at Los Angeles.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Virginia H. G. Walker (July 24): The walnut caterpillar was observed in considerable numbers on several different species of hickory at Norfolk.

MIDRIB WALNUT APHID (Callipterus juglandis Frisch)

Oregon D. C. Mote (July 13): B. G. Thompson reports finding considerable numbers of mid-rib aphids on walnuts.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

New England E. F. Felt (July 21): The European willow leaf beetle is generally prevalent, defoliating many willows in southern New England and southern New York.

Connecticut R. B. Friend (July): Several willows at Farmington were severely injured by this insect during the last month.

Maryland E. N. Cory and assistants (July 17): This insect is defoliating willows in the vicinity of College Park, Prince Georges County, also in Baltimore County.

Pennsylvania J. N. Knull (July 10): Willows in the vicinity of Pond Bank, Mont Alto State Forest, Franklin County, are heavily infested.

~~WILLOW SAWFLY~~ (Cimbex americana Leach)

North Dakota J. A. Munro (July 18): Specimens of the giant sawfly were received July 1 from A. H. Challey, Wahpeton, Richland County, with a report that they were causing much injury to foliage of willows.

INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

JAPANESE BEETLE (Popillia japonica Newm.)

Connecticut

E. P. Felt (July 21): An extensive infestation was located on the border of Danbury and Ridgefield.

New Jersey

N. J. State Coll. of Agr., Weekly News Letter. The beetles started to emerge in Gloucester County June 27, Burlington County July 3, Cumberland County July 11, and Monmouth County July 18.

A. M. Caudell: On July 13, at Pennsville, I saw the beetles flying in the hot sun in numbers.

Delaware

L. A. Stearns (July 22): The Japanese beetle is very active on elms along the highway north of Wilmington today.

Maryland

E. M. Cory (July 21): The Japanese beetle is moderately abundant in certain locations.

J. A. Hyslop (July 27): A very heavy infestation of Japanese beetles has developed near Bonnings in the north-eastern section of Washington, D. C.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut

W. E. Britton (July 23): Beetles are now found in flowers and seem to be fully as abundant as ever in spite of the lead arsenate treatment practiced by many owners. Of course there are many untreated lawns which supply the beetles. The heavy rainfall has favored the lawns and grub injury is not prominent.

AZALEA LACE BUG (Stephanitis pyrioides Scott)

Pennsylvania

E. P. Felt (July 21): The azalea lace bug was reported as abundant and injurious to azaleas in Philadelphia.

TWO-MARKED TREEHOPPER (Enchenopa binotata Say)

Nebraska

M. M. Swenk (July 1): Bittersweet vines are this year heavily infested with the two-marked treehopper, which in some cases has done serious damage to these vines.

CHRYSANTHEMUM LACE BUG (Corythucha marmorata Uml.)

Mississippi

R. B. Deen (July 21): Lace bugs were noticed doing considerable damage to foliage of chrysanthemums in Lee County.

FLEA-BEETLES (Haltica litigata Fall.)

Mississippi

J. M. Langston (July 23): Flea-beetles belonging to this species were found to be abundant on and causing considerable injury to crepe myrtle at A. & M. College early in July.

CYCLAMEN MITE (Tarsonemus pallidus Banks)

Maryland

E. N. Cory and assistants (July 17): Quite a severe infestation of the cyclamen mite in field-grown delphiniums was noted in southern Prince Georges County.

OLEANDER SCALE (Aspidiotus hederæ Vallot)

Mississippi

H. Gladney (July 17): This scale insect was found seriously infesting asparagus ferns in Ocean Springs, Miss.

IRIS

A SNOOT BEETLE (Mononychus vulpeculus Fab.)

New York

W. E. Blauvelt (June 17): Specimens which were attacking blue iris have been received from Batavia.

IRIS BORER (Macronoctua onusta Grote)

Wisconsin

E. L. Chambers (July 21): Iris borers are being found by the nursery inspectors doing heavy damage to some plantings of Iris. Several plantings that were condemned were found with more than 50 per cent infestation.

PITTOSPORUM

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Mississippi

G. I. Bond (July 20): The cottony cushion scale is pretty well scattered all over the city of Laurel, being rapidly brought under control by ladybird beetles, Rodolia cardinalis Muls. The scale has been apparently completely eradicated from many heavily infested pittosporum bushes. The beetles have been found to have migrated to widely separated infestations, Laurel, Jones County.

ROSE

ROSE LEAF BEETLE (Hodonota puncticollis Say)

Connecticut

E. F. Felt (July 21): The rose leaf beetle was extremely abundant and injurious to roses at Westport.



ROSE CURCULIO (Rhynchitis bicolor Fab.)

Massachusetts

E. P. Felt (July 21): The rose curculio was abundant upon roses in the Boston area.

North Dakota

J. A. Munro (July 13): Rose curculio injury was reported from points in Grand Forks, Cass, Emmons, Logan, Barnes, and Foster Counties during June.

Wyoming

C. L. Corkins (July 20): An unusual number of calls for control methods for the rose snout beetle have been received. Apparently the abundance is above normal.

ROSE SAWFLY (Caliroa anthrax Fab.)

Nebraska

M. H. Swenk (July 1): Roses throughout the State were severely attacked.

BRISTLY ROSE SLUG (Cladius isomerus Nort.)

Ohio

E. W. Mendenhall (July 13): Rose bushes in several places in the city of Columbus look as if they had been fired. The bristly rose slug skeletonizes the leaves from the under side.

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Wisconsin

E. L. Chambers (July 21): Heavy losses have resulted from the ravages to corn, shade trees, and ornamental shrubs in Eau Claire, Monroe, and LaCrosse Counties this summer. The injury took place over large areas whereas it usually is confined to limited areas.

SNOWBERRY

MOURNING-CLOAK BUTTERFLY (Aglais antiopa L.)

Oregon

J. A. Beal (July 13): An exceptionally heavy brood of the mourning cloak butterfly occurs over a wide range in eastern and southern Oregon. Its principal food appears to be the snow bush. The spiny black caterpillars move in armies to new feeding grounds and attract much attention. At present many butterflies are emerging from the cocoons which are suspended from the snow bush.

SPIRÆA

COTTON APHID (Aphis gossypii Glov.)

Mississippi

H. Dietrich (July 20): A. gossypii has become so plentiful on Spiræa in plantings and nurseries at Lucedale that control measures are necessary. It is also very abundant on satsuma in one grove at Lucedale.

SUNFLOWER

HARLEQUIN BUG (Murgantia histrionica Hahn)

South Carolina

F. K. Harrison (July 8): The harlequin bug is reported as attacking Japanese sunflower and Michaelmas daisy at Fairfax.

YEW

BLACK VINE WEEVIL (Brachyrhinus sulcatus Fab.)

Massachusetts

J. V. Schaffner, Jr. (June 19): Larvæ of this species were reported injuring roots of yew trees in an ornamental planting on a private estate. A collection of larvæ and pupæ were received. Adults began issuing June 19.

VERBENA

A LACEBUG (Telconemia nigrina Champ.)

Mississippi

J. M. Langston (July 23): Lace-bugs of this species were reported as seriously injuring verbena plants at French Camp on June 27.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

EYE GNATS (Hippelates spp.)

Maryland

F. C. Bishopp (July 7): Eye gnats, H. flavipes Loew, were persistently buzzing about the eyes of men in the residential sections of College Park.

North Carolina

D. G. Hall (July 20): At Charleston H. pusio Mall. has been obtained in traps during the spring months, but has not yet been especially annoying to man. At the present time the gnats are becoming more abundant, and we can anticipate the extreme annoyance which occurs during the late summer and fall months in this vicinity.

Georgia

W. E. Dove (July 20): H. pusio Mall. was present in noticeable numbers and was of some annoyance during this season of the year at Waycross. The Commissioner of Health informs us that conjunctivitis due to this species is extremely common during the fall months. It did not cause closing of the schools but it resulted in suspension of a considerable number of children during the fall term. The infection has been known at this locality for several years.

Mississippi

J. P. Kislando (July 20): Eye gnats are very annoying in Stone and Forrest Counties.

SANDFLIES ( Culicoides sp.)

North Carolina  
and  
 Georgia

W. E. Dove and D. G. Hall (July 20): Cages in South Carolina used for recovery of adult sandflies, Culicoides sp., from their breeding places show that several species emerge during the summer when the weather conditions are favorable. They are not so annoying in residences during this season of the year, but feed freely near their breeding places in the marshes.

DOG FLEAS (Ctenocephalus canis Curt.)

General

J. L. Webb (July 28): For the past three weeks this office has been flooded with inquiries both by letter and telephone for control measures to be taken for flea infestation of houses. The city of Washington seems to be pretty well infested as well as the environs, and we have had inquiries from as far north as Massachusetts. It is a little later than usual and the pests seem to be more abundant than usual.



South Carolina and Georgia W. E. Dove (June 20 to July 20): Infestations of dog fleas on residences have been very numerous in South Carolina and Georgia.

Nebraska M. H. Swenk (July 1 to 15): Many reports of the infestation of houses, outbuildings, and premises with fleas in eastern, and especially southeastern, Nebraska continued to come in during the period here covered.

A THRIPS (*Thysanoptera*)

Ohio T. H. Parks (July 8 and 15): Frequent complaints were received between July 8 and 15 regarding a small thrips which annoyed people by crawling on the arms and face. The insect had disappeared by July 20.

CHIGGER (*Trombicula irritans* Riley)

Pennsylvania J. N. Knull: Chiggers are very abundant in the vicinity of Mont Alto this year.

Illinois J. H. Bigger (July 20): Chiggers are very abundant. There have been many reports.

CHIGOE (*Tunga penetrans* L.)

Mississippi J. M. McEvilly (July 20): Chigoes have been very numerous this season in Pike County.

RAT MITE (*Liponyssus bacoti* Hirst)

Georgia W. E. Dove (July 15): The tropical rat mite was especially annoying in a residence at Waycross during this spring.

LONE STAR TICK (*Amblyomma americanum* L.)

South Carolina H. O. Schroeder (July 20): This species of tick is very important as a pest of man and wild animals on the islands in the vicinity of Charleston. They have been found to be annoying throughout the spring months.

Georgia H. O. Schroeder and D. G. Hall (June): On Wassaw Island, near Savannah, the lone star tick was found to be a serious pest of deer, hogs, turkeys, and man.

A TICK (*Argasidae*)

Idaho C. Wakeland (July 23): A tick, close to *Ornithodoros turicata* Duges, was collected at Moscow. Four specimens were collected infesting a summer cottage. One specimen engorged. Bites on ear and face of lady occupant caused painful swelling and heavy scab formation.

## CATTLE

### STABLE FLY (Stomoxys calcitrans L.)

raska

M. H. Swenk (July 1 - 15): Complaints of severe annoyance to livestock by the stable fly, which began to come in during the third week in June, ceased abruptly during the first week in July.

## HORSE

### HORSE FLIES (Tabanidae)

th Carolina

W. E. Dove (June 30 to July 20): On June 30 the predacious wasps known commonly as "horse guards" were present at Savannah, Ga., averaging one to each animal. Rarely a tabanid could be found. From July 10 to July 20 these wasps averaged two to three to each cow or horse. During this time tabanids could be collected only at protected places away from animals. These wasps occur throughout Florida as well as South Carolina and Georgia, and are said to be very effective in control, but do not get in their work until late in the season.

th Dakota

A. A. Penn (July 3): The black gad fly (Tabanus atratus Fab.) was reported as prevalent and annoying cattle in the vicinity of Ellendale.

bama

H. Dietrich (July 20): Horse flies are unusually abundant in southwestern Alabama this summer.

issippi

H. Dietrich (July 20): Horse flies are unusually abundant in southeast Mississippi this summer.

as

O. G. Babcock (July 7): Tabanids are said to be more abundant through Edwards Plateau country than at any time during the past 12 years.

### HORSE BOTFLIES (Gastrophilus spp.)

th Dakota

J. A. Munro (July 18): Horse botflies are causing trouble in Golden Valley, Bowman, Williams, Burke, Grand Forks, Dickey, Ward, and Morton Counties.

## POULTRY

### STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

rgia

E. O. Schroeder (June): An infestation of the sticktight flea was found to occur near Augusta. It was apparently not due to a recent importation.

CHICKEN MITE (Dermanyssus gallinae L.)

North Dakota

C. T. Carlson (July 13): Chicken mites are very abundant this year.

HOUSEHOLD AND STORED-PRODUCT  
INSECTS

EUROPEAN EARWIG (Forficula auricularia L.)

Oregon

D. C. Mote (July 13): The increased number of requests for information on control indicates that this insect is more abundant this year.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

California

Harold Ryan (June 29): In May we had a considerable number of inquiries from property owners in regard to winged ants that came to their notice. In practically all cases the winged male Argentine ant was submitted for identification. No female migratory forms of this ant were turned in.

Mississippi

N. L. Douglass (July 18): In the localities where infestation of the Argentine ant occur the results of the control campaigns are pleasing in most cases. It is hoped that the only infestation in Granada County is practically exterminated. Very good results have been obtained in both the infestations in Yalobusha County. The only infestation in Carroll County looks as though at the present time eradication will be possible within the near future. Of the three infestations in Montgomery Co., no Argentine ants have been found thus far this spring at Duck Hill, Miss., and very few at Kilmichael, and while complete eradication at Winona is not in sight yet, a number of the blocks have been cleaned up this year.

CONFUSED FLOUR BEETLE (Tribolium confusum J.Duv.)

Nebraska

M. H. Swenk (July 1): A Cass County farmer found his hay mow alive with larvae and beetles of this species developing in the heavy accumulation of hay dust during the last week in June.

WHITE-MARKED SPIDER BEETLE (Ptinus fur L.)

Wisconsin

E. L. Chambers (July 22): Several serious infestations of the white-marked spider beetle have been reported in mills in Eau Claire and Green Lake Counties.



TIMBER BEETLE (Nacerda melanura L.)

Massachusetts

A. P. Morse (Jan. to June): There was a local outbreak of this beetle in a newspaper office at Salem. The beetles were quite active, disagreeably in evidence while flying about, both day and evening. They seem to have been brought in through secreting themselves in the folds at the ends of rolls of newspaper stock imported from Dalhousie, New Brunswick. They are said to breed in decayed wood and it seems possible that the large amount of sawdust, bark, and such material in the vicinity of pulp mills might account for their presence in numbers.

J. V. Schaffner, jr. (July 7): A representative of an insecticide company of Boston brought in specimens of N. melanura L. for identification. He reported that these beetles were swarming all over an old four-masted schooner which had been fitted up as a night club and tied up to a wharf in Boston Harbor. His company had been called on to exterminate this insect. On July 16 he reported that the breeding places were located in the lower hold where the insects were boring in the timbers and that instead of the beetles coming from the outside there were swarms of them trying to get out of the boat.

AN ANOBIID BEETLE (Xyletinus peltatus Harr.)

Mississippi

J. Milton (July 21): This species has caused damage to pine floors in a home at Booneville.

PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from "News Letter", July, 1931

(Not for publication)

PINK BOLL WORM (Pectinophora gossypiella Saund.)

The finding of the first pink bollworms in the 1931 cotton crop in the Salt River Valley of Arizona, on May 5 and 6, was mentioned in last month's News Letter. The two fields involved are located about 10 miles southwest of Phoenix and some 15 miles west of the 1930 noncotton zone, in the Laveen section. Since then specimens have been found in two additional fields. On May 11 one larva was found in a field about 6 miles east of the 1930 noncotton zone. An exit hole was found in a green boll from this field on May 22, indicating that the first generation of the current season had already begun to emerge. Since the initial infestation was found, additional specimens have been taken from this field and the two fields about 10 miles southwest of Phoenix mentioned in the July 1 number of the Survey Bulletin. One specimen was taken from a field about 4 miles south of the 1930 noncotton zone on May 29, this being in the Goodyear vicinity.

During May 2,373 samples of bolls were inspected at the San Antonio laboratory, this being the greatest amount inspected any month since the laboratory has been in operation. These samples represented fields in 216 counties in the States of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, and Texas. Samples had already been inspected from North Carolina and Tennessee. A total of 7,892 samples had been inspected at the close of May, all with negative results.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

The first European corn borer pupa found in 1931, as reported by the Arlington Laboratory, was collected in the vicinity of Arlington, Mass., on April 16, and the first record of emergence, also in that neighborhood, was made on May 22.

GIPSY MOTH (Porthetria dispar L.)

In New Jersey the work which is being done cooperatively by the Federal and State forces consisted mostly of checking up work around previously infested areas. This was practically completed during the month and no infestations were found. Many of the Federal men in New Jersey were transferred during the last of May to Massachusetts and Connecticut to assist in the spraying work which was being done there during June.

JAPANESE BEETLE (Popillia japonica Newm.)

The earliest emergence of adult Japanese beetles for the season was recorded on May 23 at Andalusia, Pa., when a single specimen was collected in an outdoor nursery frame. Three beetles were collected on May 30 near Chester, Pa., having been discovered on weeds in a hollow along a creek. These recoveries were of beetles which had overwintered under particularly favorable conditions as to protection from severe weather. Consequently their transformation into the adult stage does not represent the normal life cycle of the insect in the region of Philadelphia, where the mass emergence of the beetle will not occur until late in June or early in July.

MEXICAN FRUIT FLY (Anastrepha ludens Loew)

Following the finding of an infestation of the fruit fly in fruit held in storage near Mission, Tex., on April 22, an intensive effort was made to locate and thoroughly examine all fruit held in storage within the quarantined area.

Additional infestations in fruit growing locally in Matamoros were found during the month, bringing the total number of infested premises to 12. On April 15, larvae of the fruit fly were found feeding in half-grown fruit of Sargentia greggii, one of the sapotes. Larvae were also taken from fruit of the white sapote, Casimiroa edulis, of which there are 5 trees growing in Matamoros.

DATE SCALE (Parlatoria blanchardi Targ.)

During the month of May, 33,847 palms were inspected and a single Parlatoria scale was found. This specimen proved to be dead. During the past six months the routine inspectors have found only 3 infested palms; on 2 of these dead scale only was found. The scout inspectors, inspecting small plantings, ornamentals, etc., have located 21 infested palms during the same period, 12 in the Coachella Valley, 7 in the Imperial Valley, and 2 in the Yuma Valley. Sixteen of these palms were of no value and were dug out and destroyed; the remaining 5 were defoliated and torched. In the corresponding six months a year ago 180 infested palms were found.

A THRIPS (Frankliniella helianthi Moulton)

An interception of a sotol bloom stalk (Dasylirion sp.) at Presidio, Tex., on March 22, 1931, bearing thrips, was submitted to J. R. Watson, of Gainesville, Fla., who determined it as this species and further remarked: "This is an interesting lot, as it is the first time it has been recorded outside of California, from where it was described. This is also a new host plant and a decidedly different host plant than that from which it was described, namely, sunflowers. I suppose you have no data as to what part of Mexico this came from." Inquiry from R. B. Lattimore, at Presidio, as to the Mexican origin of the host material,



brought the reply that since it came in a truck and the flowers are rather delicate the probability is that it was collected within a short radius from the port, and that search would be made for the parasite in the neighborhood.

The interesting feature in this case is the addition of a new and unsuspected species to the known hosts of this thrips, and it exemplifies once again the part so frequently played by our inspection force in contributing in an incidental but effective manner to the sum of knowledge on insects and diseases.

INSECT CONDITIONS IN PORTO RICO DURING JUNE, 1931.

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico.

June beetles, Phyllophaga spp., had so badly stripped the leaves of a young cane field at Isabela early in May according to Dr. G. N. Wolcott that it seemed the plants could hardly recover. However, when I visited it, in company with Dr. Wolcott and J. G. Myers, on June 1, much new growth was present owing to recent heavy rains; the older leaves were badly damaged.

Only two beetles of Phyllophaga portoricensis Smyth were observed during three hours' collecting at the several large lights at the Sugar Company's hotel at Aguirre on the night of June 2 (G.N.W. and M.D.L.). They were entirely absent during the nights of June 27 and 28. (M.D.L.)

Ligyris tumulosus Burm. adults were common at the lights at the Sugar Company's hotel at Aguirre on the night of June 2, but on the nights of June 27 and 28 only about a half dozen beetles were observed.

The adults of the pink leaf-sheath bug, Lasiochilus divisus Champion, were observed in fair numbers at the lights of the Sugar Company's hotel at Aguirre on the night of June 2, but were scarce on the nights of June 27 and 28.

A leafhopper, Protalebra brasiliensis De Long, has been observed breeding abundantly throughout the month on large patches of Bidens pilosa, locally called margarita or clavelillo, on the edges of the El Morro Golf Course at San Juan. Mr. Wolcott states that this leafhopper is sometimes abundant on cane growing in weedy, sandy fields but that its occurrence on cane is accidental, its common food plant being Wedelia trilobata, (Jour. Dept. Agr. P.R. 5 (3): 31, 1921, erroneously det. by Metcalf as Erythroneura comes Say.) Adults were found commonly on carrots by R. T. Cotton at Rio Piedras in 1917.

On June 2 a scale (Howardia biclavis Comst.), determined by H. Morrison, was called to our attention by Mr. T. B. McClelland, Director of the Federal Experiment Station at Mayaguez. It was abundant on the trunks and branches of a number of shade trees (Gliricidia sepium) of coffee in a large fertilizer experimental plot which Mr. McClelland has been running for some years. He feels that the scale has considerably interfered with the growth and production of a number of trees.

The "vaquita," Diaprepes spengleri L., was badly stripping the foliage of a number of young grapefruit trees at the Substation grounds at Isabela on June 1. (G.N.W. and M.D.L.). On June 2, in company with J. G. Myers and G. N. Wolcott and Mr. Herbert Osborn, a section of the Aguirre Sugar Company's properties, Santa Isabel, near Guyama was visited to look for egg parasites of Diaprepes. The beetles were exceedingly abundant on a number of good-sized trees of a Ficus, supposedly F. laevigata, growing along several roads through the cane fields, and much stripping of their



foliage had occurred. A number of batches of eggs were found but none appeared to be parasitized. A number of "moca," Andira inermis, H.B.K., trees were also rather badly stripped by the beetles in the same locality.

The green scale, Coccus viridis Green, was observed lightly infesting a number of young grapefruit trees at the Substation at Isabela on June 1. (G.N.W. and M.D.L.).

Owing to heavy rains, growth of windbreaks, and spraying with oil sprays, infestations of the green scale have almost disappeared from plantings of grape-fruit in at least four groves inspected in the vicinity of Isabela. (G.N.W.)

The leaf-beetle Diabrotica graminea Baly was numerous on a small patch of mung beans, about 1/8 acre, at the Station grounds at Rio Piedras on June 8. The beetles were doing considerable damage to the blossoms and also some leaf feeding.

The moths of the smaller beet webworm, Zinckenia fascialis Cramer, were not uncommon at the lights of the Sugar Company's hotel at Aguirre on the nights of June 28 and 29. The larvae are rather common beet and Amaranthus feeders on the Island.

A heavy infestation of Corythucha gossypii Fab. in one field of lima beans near Aguadilla has caused appreciable reduction in both quantity and quality of crop. (G.N.W.)

The fall armyworm, Laphygma frugiperda S. & A., was reported by Dr. Wolcott as causing considerable damage during the latter part of the month to the alfalfa at the Isabela Substation. The outbreak, however, was quickly checked, he reports, by cutting the alfalfa and allowing the imported toads, Bufo marinus L., which are numerous, to eat the caterpillars. This insect was reported (through G.N. Wolcott) by T.B. McClelland, Director of the Federal Experiment Station, as causing an outbreak on grass at Mayaguez.

The leaf-tier Dichomeris piperatus Wlsm. seemed to be doing about the same amount of damage when examined on June 1 in the experimental plots at the Isabela Substation as during the previous month. Dr. G.N. Wolcott reports that it continued to be injurious during the month.

The canna leaf-tier, Calpodex ethlius Cramer, was observed to be moderately infesting a number of plants bordering a large entrance driveway near the Substation at Isabela on June 1 (M.D.L., G.N.W., J.G.M.).

The gramma Psara, Psara phaeopteralis Guenee, was abundant, both moths and larvae, on June 28 and 29 on the St. Augustine grass (locally called gramma grass) covering the fairways on the 9-hole golf course of the Sugar Company at Aguirre. Dr. Wolcott reports an outbreak on St. Augustine grass during the latter part of the month about 3 miles southwest of Isabela. The only other previous record of injury in the Island, from Hatillo, in 1921, where the larvae were abundant in a pasture, was according to Dr. Wolcott fully as serious.



The mealybug Orthezia insignis Douglas was present on rose cuttings received on June 4 from a garden in Santurce. The accompanying letter stated that a number of rose bushes were being rather badly injured by the insects and remedial measures were requested.

Dr. G. N. Wolcott reports a high infestation of the pink boll worm, Pectinophora gossypiella Saund., on the first crop of cotton in one field near Aguadilla, often two or three caterpillars being found in one boll or one large caterpillar in a small boll. He states that hard successive rains and the pink boll worm have caused fully 50 per cent loss of the crop in this field. Mr. E. F. Rorke, of the San Juan Ginnery Co., states that the field in Camuy which showed 6 per cent, 10 per cent, and 18 per cent infested bolls, based on counts of 100 bolls on May 1, May 8, and June 6, respectively, increased to 22 per cent and 28 per cent on June 13, and 28, respectively. Two other fields at Camuy showed 4 per cent and 13 per cent infested bolls on June 17 and still another field 12 per cent on June 28. He further reports that a field at Hatillo in which the crop was almost finished had 31 per cent infested bolls by actual count on June 17. The situation is more serious than ever before on the whole North Coast since the infestation is higher earlier in the life of the crop. Excessive rains during the Spring delayed picking and no cotton was brought until June 3. Juan Pastor Rodriguez, General Agricultural Agent for the South Coast, states that by May 15, the date set for completion of the clean-up against pink boll worm, only about 5 per cent destruction of the old plants had been accomplished but that by June 1 about 50 per cent of the old cotton plants in the South Coast had been pulled up and burned and that the work was practically completed by the end of the month. This does not apply, however, to the towns of Guyama, Patillas, and Maunabo where the crop had been planted later, the last of the cotton crop not being purchased from growers until early in June. Mr. Pastor states that by the end of June a large percentage of the wild cotton trees (algodon sylvestre) along the roadsides in Guyanilla and Yauco had been cut down and burned; that from Penuelas to Guanica nearly all along the road and some in the interior around the fields had been destroyed; around Ponce, however, and along the road from Santa Isabel to Guyama, including Salinas, not so large a proportion has been destroyed, efforts being concentrated on destruction of the remnants of the cultivated Sea Island crop.

Dr. G. N. Wolcott reports the cotton leaf worm, Alabama argillacea Hubner, very abundant towards the end of June around Isabela and often causing entire defoliation despite efforts of the growers to control the outbreak. Almost daily rains washed off the poison soon after it was applied, thus rendering control difficult. The outbreak did not spread more than 2 miles south of the North Coast and a few scattering caterpillars were just beginning to appear in the cotton around Aguadilla at the end of the month. Dr. Wolcott has observed the moths which were attracted to lights about the dinner table in the house to feed on the juices of dead ripe mangos. He states that this observation will probably also apply to moths in the field feeding on fruits still on the trees or fallen to the ground.

E. F. Rorke reports that new infestations started up during June, in general in the North Coast section but especially about Hatillo, Camuy, and Isabela, where the cotton plants are large and the crop more concentrated.

The cotton leaf-miner, Nepticula gossypii Forbes and Leonard. Many plants showed evidences of considerable mining of the leaves earlier in the life of the crop at Penuelas.

The cotton stainer Dysdercus neglectus Uhler was reported abundant in an old cotton field long past picking on June 25 at Carolina. D. andreae L., by far the most common of the two here, was almost entirely absent. Specimens were submitted to check the determinations. Mr. Flores now believes that the stainers he reported on in April (I.P.S. Bulletin 11 (4):236, June, 1931) were almost all if not entirely neglectus instead of andreae. One specimen of Oncopeltus aulicus Fab. was brought in but I judge it was probably not feeding on the cotton bolls. (Ismael Flores Lugo, Agricultural Agent.

Dysdercus andreae L. has not been troublesome so far during the month on the North Coast and the blister mite Eriophyes gossypii Banks is scarce. (E. F. Rorke)

The black scale, Saissetia nigra Neitner, was present in the greatest abundance in Penuelas that I have yet seen in the island, many plants having the stems and twigs entirely encrusted with the scales.

The cotton leaf blister mite, Eriophyes gossypii Banks, was observed badly infesting many old plants in a field from which the crop had already been picked on June 2 at Penuelas.

The infestation of the "pollilo," Cryptotermes brevis Walk., was reported in one of the government buildings in San Juan. Upon investigation it was found that many valuable records had become infested, some of them so badly as to have been practically destroyed.

#### OUTSTANDING ENTOMOLOGICAL FEATURES FOR MEXICO FROM JANUARY TO JUNE, 1931.

By F. Garcia Robledo

Chief of the Federal Service for the Defense of Agriculture  
San Jacinto, D.F., Mexico

Agrotis ypsilon Rott. constituted the principal pest of corn in the vicinity of Montemorelos and Linares in Nuevo Leon and on the outskirts of Torreon, Coahuila. In the latter place it also severely attacked wheat. A species of Agrotis was also attacking corn in the environs of Ixtlan del Rio in Nayarit during June.

Peridroma sp. started attacks on corn in the vicinity of Ixtlan del Rio, Nayarit, and Tampico, Tamaulipas, during June.

Heliothis obsoleta Fab. is attacking corn in Lower California in the vicinity of Ensenada, also in the Tepic region of Nayarit during March.



In the middle of May Diatraea sp. appeared on sugarcane in the vicinity of Montemorelos, Nuevo Leon, and was also reported from Linares. This insect also attacked sugarcane in June in Ixtlan del Rio. In the month of June Diatraea sp. appeared in the greater part of the Camargo region of Chihuahua in the plantations of corn. It is calculated that 10 per cent of the crop is injured.

Chilo sp. started attacking sugarcane in June in Ixtlan del Rio, in Nayarit.

Wireworms were one of the principal pests of corn in the vicinity of Montemorelos and Linares in Nuevo Leon and were also reported as attacking corn in Colima. Early corn is planted in February and March in the Tampico, region of Tamaulipas and larvae of Elateridae destroy the corn when it begins to germinate.

Phyllophaga larvae attacked corn in Colima, appearing in May and doing much damage.

Sphenarium sp. and Taeniopoda equus Burn. started attacks on corn in the region about Ixtlan del Rio, Nayarit, during June.

Red spiders, Tetranychus sp., were infesting corn in Colima and near Torreon, Coahuila. These insects were very serious during June over the greater part of the Camargo region in Chihuahua.

Estigmene acraea Drury was observed on alfalfa in the district of Lampazos, Nuevo Leon.

The alfalfa caterpillar Autographa gamma californica Speyer, which attacks the leaves and flowers of alfalfa, clover, and likewise barley, pea, and cabbage, had been scarce during the period in Lower California, vicinity of Mexicali.

Cotton is planted in April and May in the vicinity of Yavaros, Sonora, and Anthonomus grandis Boh. causes great damage to this plant every year and requires extensive control measures. This was one of the principal cotton insects during June in the environs of Mier, Tamaulipas, and was also common in Coahuila; although numerous there are no indications that they are making any intensive invasions this year except in the vicinity of Lagunera where control measures were applied.

Alabama argillacea Hbn. is important in Coahuila when it appears early but it is not very common this year and for that reason is not causing serious injury. In general, it occurs about every four years, and at present is of no importance. It was, however, one of the principal cotton insects during June in the Mier region of Tamaulipas, attacking the plants when they are a few days old.



Pectinophora gossypiella Saund. has made its appearance in the plantations of cotton near Camargo, Chihuahua, but its greater activities develop in the fall. The damage done in 1930 is estimated at 41 per cent. It is common in Coahuila, in the vicinity of Torreon; although numerous there are no indications that they are making any intensive invasions this year, except in the vicinity of Lagunera where control measures were applied.

Bucculatrix thurberiella Busck appeared on cotton in Lower California in the vicinity of Mexicali, but was combatted at once in order to prevent great damage.

Estigmene acraea Drury was observed on cotton in the environs of Lampazos, Nuevo Leon.

Pentatoma ligata Say is usually a serious pest of cotton around Camargo, Chihuahua, but most of its damage is noted in the fall. In 1930 it occasioned 27 per cent damage.

Aphis gossypii Giv. appeared on cotton in the vicinity of Mexicali in Lower California, requiring control measures.

Pieris protodice Bois. and P. rapae L. attacked cabbage in the district of Lampazos, Nuevo Leon, in March.

Protoparce sexta Johan. attacked tobacco and potato in May and June in the district of Lampazos, Nuevo Leon.

Phthorimaea operculella Zell. attacked potato in district of Ixtlan del Rio in June.

Leptinotarsa multitaeniata Say attacked potato in the Tepic district of Nayarit during March and April.

From March to June, Lactica viridipennis Jacoby attacked the betabel in the district of Camargo, Chihuahua, but was combatted successfully.

Epilachna corrupta Muls. is attacking kidney beans in the district of Tepic, Nayarit, district of Tampico, Tamaulipas, and near Camargo, Chihuahua.

The cultivation of the kidney bean has been started in the vicinity of Torreon, Coahuila. Epilachna varibestis Muls. will probably have to be controlled.

Macrobasis unicolor Kby. was observed in May and June in the district of Lampazos, Nuevo Leon. A second generation will possibly appear in August.

Macroductylus sp. is attacking peach near Camargo, Chihuahua, and it attacked kidney beans in June in the district of Ixtlan del Rio.

Anthonomus eugenii Cano attacked Chile pepper (*Capsicum*). The greatest activities are to be expected in the fall, in the vicinity of Camargo, Chihuahua.

Cylas formicarius Fab. attacked sweetpotato in the district of Tepic, Nayarit.

Gryllotalpa cultriger Uhler has caused considerable damage to Irish potato, and the sweetpotato called by name of "alacran de papa." in Lower California, vicinity of Ensenada.

Aphis gossypii Glover is a common pest of kidney bean in the vicinity of Linares and Montemorelos, Nuevo Leon, and occasioned some damage to cucurbits in the vicinity of Tampico, Tamaulipas.

Illinoia (Macrosiphum) pisi Kalt. attacked peas and also cotton, clover, horse bean, and the tomato in the vicinity of Lampazos, Nuevo Leon, and was very injurious to peas before the rains commenced this year in the vicinity of Tampico, Tamaulipas.

Brevicoryne brassicae L. attacked cabbage around Camargo, Chihuahua.

Anasa tristis DeG. was observed in the environs of Lampazos, Nuevo Leon, in May.

Murgantia histrionica Hahn attacked cabbage around Camargo, Chihuahua.

Euphoria basalis Gory and Perch. occasioned some damage to cucurbits in the vicinity of Tampico, Tamaulipas.

The fruit fly Anastrepha ludens Loew started its attacks of the year on mango, papaw, and guava in Colima. A very strict watch is being kept on its movements, by this office (Office for Defense of Agriculture), to work out a vigorous control campaign. It has also been attacking citrus fruits in the district of Ahuacatlan, Nayarit, and most of the fruit of guava in the district of Tampico, Tamaulipas, shows work of this pest.

Anastrepha striata Schiner attacked guava in the district of Tepic, Nayarit, during April. This insect is the predominant pest of cultivated fruits in the district of Amatlan de Canas, Nayarit. It also attacked fruit in district of Ixtlan del Rio in June.

The sweet and sour oranges in the Tepic district of Nayarit were observed in March to be attacked by Chrysomphalus aurantii Mask. and C. ficus Ashm. (= aconidum L.).

Atta fervens Say attacked citrus fruit in the district of Ahuacatlan, Nayarit.

A black woolly caterpillar has been observed on walnut in the district of Linares, that, although it has not been identified, is possibly Hemerocampa sp. The caterpillar destroys all the leaves of the trees. This pest has not been observed in former years.

Cotinis mutabilis G. and P. var. malina. O. Janson attacked peach near Camargo, Chihuahua.

NOTES ON INSECT CONDITIONS IN COSTA RICA, JUNE, 1931

J. Fid. Tristan

Director of the National Museum, San Jose.

Almost all the plants of the genus Citrus are infested by Aleurocanthus woglumi Ashby. Some trees have lost their entire foliage and the branches appear dried up. Nothing has been done to combat the pest up to the present. In April an experiment was made with a fungus, Aschersonia aleyrodis, but nothing definite has been ascertained yet about this fungus.

In the coffee plantations situated to the northwest of the capital are numerous badly injured plants. Great numbers of aphids are found on the young leaves. Some coccids and also larvae of Ctenostoma coffeellum Stainton which live in the parenchyma of the leaf and destroy it are present. This larva spins a strong cocoon, which is protected by a great number of fine threads. The tips of the infested branches turn black. In some places termites are also found. We have not yet determined the cause of the trouble.

Termites have not been so numerous this year as last. Notwithstanding this, in some parts of the city they are seen in great numbers flying in the afternoons. Some houses of wood are badly damaged.



# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

September 1, 1931.

Number 7

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING



# INSECT PEST SURVEY BULLETIN

Vol. 11

September 1, 1931

No. 7

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR AUGUST, 1931.

The serious outbreak of grasshoppers in the Great Plains region which developed during July continued through the greater part of August, with lesser outbreaks over practically the entire country.

Red spiders of several species attacking a great variety of plants, including forest and shade trees, truck crops, flowers, fruits, and shrubs, were reported from scattered localities across the northern part of the United States, from Maine through South Dakota and Idaho to Utah and Oregon.

A few specimens of the European corn borer were discovered for the first time in the State of Wisconsin, having been found in a field in Mosel township, Sheboygan County, on Lake Michigan.

The Japanese beetle has been collected at Cleveland and Columbus, Ohio, these being the first records for this State.

The corn ear worm continued to be reported as unusually abundant from practically the entire corn-growing area of the United States.

A very unusual outbreak of chinch bugs occurred at Windsor, Berkshire County, Mass. The outbreak was not extensive but the insects occurred in enormous numbers over a small area of corn and millet. The chinch bug situation as a whole in the Middle West has not changed materially since last month, although the insect has been reported this month from the lower tier of counties in Michigan and the southeastern corner of Minnesota.

The garden webworm was reported as seriously damaging alfalfa in scattered localities from Indiana to North Dakota and Iowa.

Sod webworms were unusually destructive to lawns, golf greens, and pastures from Ohio westward to North Dakota and southward to Missouri and Tennessee.

The codling moth situation has not changed materially since July. This insect continues to be seriously prevalent from New York southward to Georgia and in scattered localities from the East Central States, westward to the Pacific Northwest.

The oriental fruit moth has been found at Springdale, Ark., this year. This is the first record from northwestern Arkansas.



The grape leafhopper was very seriously abundant throughout the northern part of the San Joaquin Valley in California where it is said that they will materially reduce the marketable tonnage of grapes.

The Pacific red spider was extremely numerous late in July on grapes, deciduous fruits, and ornamentals in central California. Early in August this insect was practically eliminated by the predacious thrips Scolothrips sexmaculatus Perg.

An unusual damage to citrus is reported from Los Angeles, Calif. The false chinch bug is seriously damaging young trees in groves adjoining wheat and weed fields.

The second finding of Cardin's whitefly (Aleurodicus (Metaleurodicus) cardini Back) in the United States is reported in this number of the Insect Pest Survey Bulletin. Specimens were collected on guava in moderate abundance at West Palm Beach, Fla. The first finding was in February, 1921, when specimens were collected by W. B. Wood, of the Plant Quarantine and Control Administration, in the Plant Introduction Gardens at Miami.

Blister beetles were quite prevalent throughout the entire Mississippi Valley from Indiana, Minnesota, and North Dakota southward to Louisiana and Mississippi.

The plant bug Engytatus geniculatus Reut. was recorded for the first time as a pest of tomatoes in Orange County, Calif. This insect is said to be injurious to tomatoes in the Hawaiian Islands.

Late in July the Mexican bean beetle was found at Brattleboro, this being the first record for the State of Vermont. This insect is extremely prevalent and destructive throughout the northern part of its range, particularly north of the drought area of 1930.

Two coreid bugs, Alydus eurinus Say and A. pilosulus H. S., were found seriously injuring beans in Georgia.

During the last week of August the sugar-beet webworm developed in rather large numbers in parts of North Dakota, South Dakota, and Utah.

Many fields of peppers in southern California have been damaged from 25 to 40 per cent by the pepper weevil.

The weevil Trichalophus didymus Lec. has been found infesting strawberry crowns on the mainland at Tacoma, Wash. Heretofore, this insect has only been known from Whibley Island, Washington.

For the first time in many years the potato tuber moth was injurious to tobacco in Dane, Rock, and Jefferson Counties, Wisconsin.

The bagworm was quite generally reported from Pennsylvania westward to Indiana and Kansas, and southward to Mississippi.

The saddled prominent, which has been in outbreak numbers in New England during the past few years, seems to have reached its peak during 1930 and this year is appearing in considerably reduced numbers.

The fall webworm is very abundant throughout New England and the Middle Atlantic States.

The elm leaf beetle was found early this spring in the Yosemite National Park in California. This is the first record of this insect in the Park.

The gladiolus thrips (Taeniothrips gladioli H. & S.) is very seriously injuring gladiolus in the New England, Middle Atlantic, and East Central States.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR AUGUST, 1931

Outbreaks or incipient outbreaks of grasshoppers, notably the lesser migratory, clear-winged, and two-striped grasshoppers, are occurring in many districts over a wide territory in the Prairie Provinces, and conditions are threatening for 1932. In eastern Ontario and southern Quebec, the red-legged grasshopper is more abundant than for many years past, and is increasing. Various degrees of damage to field crops are being reported from sections of all the above-mentioned provinces.

An unusual outbreak of the green clover worm has developed throughout most of the bean-growing areas of southwestern Ontario, resulting in crop defoliation and a reduction in the yield. Although generally present, this species rarely reaches injurious proportions in Ontario.

A marked increase in the abundance and destructiveness of the Colorado potato beetle has now been reported over a considerable part of the range of this insect in Canada, including the Maritime Provinces, Quebec, Ontario, and the Prairie Provinces.

Sod webworms which occurred in outbreak form throughout southwestern Ontario, damaging or destroying lawns, golf greens, etc., have been determined as Crambus mutabilis Clem. and C. trisectus Walk. A third species, C. dorsipunctellus Kft., was recorded as injurious to lawns at Winnipeg, Man.

In Manitoba, Saskatchewan, and Alberta, blister beetles, Lytta nuttalli Say, are attacking caragana hedges and garden legumes, such as beans and peas. The increase in abundance of these insects appears to be associated with the widespread grasshopper outbreak developing in the Prairie Provinces.

In certain areas of southern Alberta the diamond-back moth is even more abundant than last year, when it caused serious damage to cruciferous crops.

The wheat stem sawfly appears to be more generally abundant than usual throughout its range in Saskatchewan.



Chinch bugs are reported to be causing material damage to lawns in the city of Halifax, Nova Scotia. This appears to be the first record of its occurrence in injurious abundance in Nova Scotia.

A particularly severe outbreak of the pea aphid occurred this season in pea-growing sections of southwestern Ontario. Local outbreaks were also reported in Fredericton, New Brunswick, and in the Chilliwack region of the Lower Fraser Valley, British Columbia.

There has been a reduction in the infestation of the common red spider in Saskatchewan and Alberta as compared with 1930, but material damage has been done to a variety of plants including roses, raspberries, low shrubs, and herbaceous plants.

The gladiolus thrips, Taeniothrips gladioli Moulton, has caused serious damage to gladioli in many parts of Ontario and southern Quebec.

The painted lady butterfly and its larvae are conspicuously common in the Maritime Provinces and Quebec, and are extremely abundant in the Prairie Provinces. As the attacks of the larvae are largely confined to thistle this species may be classed as beneficial.

The beet webworm is again very abundant in Manitoba and Saskatchewan, attacking weeds principally but also causing damage to flax.

The lesser clover leaf weevil is widely prevalent in the Maritime Provinces, and in many localities an average of 15 per cent of the clover heads are infested.

The squash bug has developed in unusually destructive numbers in sections of southern Ontario.

An unusually large second brood of codling moth larvae is anticipated in the Niagara district, Ontario. The infestation of the oriental fruit moth is reported as very light, so far. The apple and thorn skeletonizer is conspicuous in neglected apple orchards.

Insect injury to all varieties of fruit in the Okanagan Valley, British Columbia, is reported as remarkably scarce.

The fall webworm continues to increase in abundance in many parts of eastern Canada, and is a noticeable pest on various fruit and shade trees and shrubs.

The infestation of spruce and balsam by the black-headed tip moth in Cape Breton Island, Nova Scotia, has been markedly reduced, and this year's feeding by the insect is unimportant.

The European pine shoot moth is prevalent on certain species of pines in Welland County, Ontario, particularly around summer homes along the north shore of Lake Erie.



The aspen poplar leaf beetle is widespread and appears to be increasing in southern sections of Manitoba.

The walnut caterpillar is again in outbreak form in southwestern Ontario, defoliating many trees.

Reports indicate that mosquitoes, black flies, and certain other biting flies have been unusually scarce in many parts of eastern Canada, and probably also in the Prairie Provinces.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

- South Carolina A. Lutken (August 25): Grasshoppers in general are more abundant than usual.
- Ohio T. H. Parks (August 24): More than the usual numbers of grasshoppers are present in most western Ohio counties. Damage has not been very serious owing to plenty of rains to favor growth. Poisoning work has been carried out in several counties.
- Indiana J. J. Davis (August 22): Grasshoppers destroyed alfalfa on a  $3\frac{1}{2}$ -acre field at Indianapolis August 1. They also damaged onions. During July grasshoppers were conspicuously abundant and destructive in Clinton County.
- W. B. Noble (July): The Carolina locust, Dissosteira carolina, was unusually abundant in central Indiana. It was observed flying about lights at night.
- Illinois J. H. Bigger (August 18): Grasshoppers are damaging soybeans, alfalfa, and corn. I have investigated severe outbreaks in about 90 acres of soybeans and 20 acres of alfalfa in Morgan and Greene Counties. Damage to corn was seen in Morgan, Greene, and Christian Counties. Only a small part of the damage in these areas was seen.
- Michigan R. Hutson (August 24): Grasshoppers are very abundant in grains in the upper peninsula. There are no blister beetles and few hairsnakes.
- Wisconsin E. L. Chambers (August 24): Local outbreaks of grasshoppers have been damaging crops in many sections of the State, doing serious injury to tobacco, corn, and small grains.
- Minnesota A. G. Ruggles and assistants (August): Grasshoppers were reported during August as still doing serious damage at many points throughout Minnesota. The species involved, in the order of their importance, were Melanoplus bivittatus Say, Camnula pellucida Scudd., M. atlanis Riley, M. femur-rubrum DeG., and Dissosteira carolina L. (Abstract, J.A.H.)
- Kentucky Mary Didlake (August 24): Grasshoppers are very abundant on tobacco and tomatoes in Fayette and other counties.
- North Dakota J. L. Munro (August 22): Grasshoppers have been the pest of greatest abundance in North Dakota this season. Indications are that there will be another serious outbreak next year.
- South Dakota H. C. Severin (August 20): Grasshoppers are very abundant. The outbreak has become more extensive and much of the State is affected.

Nebraska

M. H. Swenk (July 15 to August 1): The grasshopper outbreak continued to develop in extent, and somewhat in severity, during the last half of July. The 31 infested counties reported on July 15 have now increased to 65, though in many of these the damage is neither widespread nor serious. The infestation has been heavy and general, and the crop loss serious, in Arthur, Boyd, Buffalo, Dawson, Keith, Keya Paha, Knox, and Perkins Counties. Cedar, Dixon, and Holt Counties have been largely heavily infested. Parts of Brown, Chase, Cherry, Custer, Greeley, Lincoln, Rock, and Sheridan Counties have been heavily infested.

Iowa

C. J. Drake (August 3): Grasshoppers are extremely numerous over a large section of Iowa, particularly in the western half of the State. Many fields of new alfalfa have been totally destroyed by the hoppers, and considerable damage is being done in old alfalfa fields. To illustrate, in Monona County an 80-acre field of alfalfa was totally destroyed by the hoppers after the first crop was harvested. I visited this field about ten days ago and it was impossible to find any new growth in the field. The differential locust, M. differentialis Uhler, is the predominating species. The two-striped locust, Melanoplus bivittatus Say, is almost as abundant as the foregoing species. The red-legged locust, M. femur-rubrum DeG., is also very abundant. The lesser migratory locust, M. mexicanus Sauss., is almost as abundant as the red-legged locust. In some fields in the western portion of the State the hoppers run around 20 to 40 per hill of corn. These fields are not very numerous. Most damage is being done in alfalfa fields and around the margins of cornfields. The State of Iowa has just purchased four carloads of commercially prepared poisoned bran mash to take care of heavily infested waste areas along the Missouri River and other sections of western Iowa.

Missouri

L. Haseman (August 25): During August the three common species of grasshoppers have been very destructive.

Kansas

H. R. Bryson (August 22): The grasshopper problem is a serious one over the entire State. Although there are a large number of all species present the greater part of the damage is being done by Melanoplus differentialis and M. bivittatus. M. atlantis and M. femur-rubrum are also numerous and will no doubt cause considerable injury this fall. Migrations from neighboring States have not been observed. Fall sowing of alfalfa and the seeding of winter wheat to avoid serious grasshopper injury promises to be a problem. Considerable injury was evident along the edges of fields of corn, kafir, and alfalfa. More reports of grasshopper injury have come from the western and northeastern parts of the State than from other sections.

Tennessee

C. Benton (July): The Carolina locust is abundant in pastures and fields in the southern part of the State. There has been much complaint of damage to tobacco as well as to clover and other legumes. Some injury to corn also was observed.



Oklahoma

C. F. Stiles (August 1): Grasshoppers are very abundant in the southwestern and central parts of the State.

Montana

R. W. Gjullin (July): A recent survey indicates that Melanoplus femur-rubrum DeG. and M. bivittatus Say are fairly abundant in an extensive area in southeastern Montana. In the eastern tier of counties M. mexicanus atlanis Riley, M. packardii Scudd., and Dissosteira carolina L. are the dominant species. While grasshoppers do not occur in alarming numbers at present, continued dry weather and favorable conditions for egg laying make it almost certain that grasshoppers in outbreak numbers are to be expected in these and other scattered areas over the State next year. In the western portion of the State Camula pellucida Sc. reached destructive numbers. There was also a severe outbreak of M. bivittatus Say in western Montana in Beaverhead County.

Wyoming

A. G. Stephens (August 21): Grasshoppers are moderately to very abundant in the northeastern and central parts of the State.

Nevada

G. G. Schweis (August 21): Many species of grasshoppers are present doing damage in the western part of the State.

Utah

G. F. Knowlton (August 3): Grasshoppers continue to be very abundant and destructive in many parts of Utah.

Arizona

C. D. Lebert (July 27): Melanoplus differentialis Uhler and others of the grasshoppers are very abundant in the Salt River Valley.

California

S. Lockwood (July 27): According to the Monthly News Letter of Mr. L. A. Burtch, County Agricultural Commissioner of Kern County, grasshoppers and army worms have not been responsible for commercial damage in his county. His News Letter says, "Approximately one ton of poison bran mash was put out for grasshoppers at Lebec and very good kill was obtained."

#### CUTWORMS (Noctuidae)

Illinois

W. P. Flint (August 10): The yellow-striped army worm, Prodenia ornithogalli Guen., is more abundant in the State than normally at the present time.

Minnesota

A. G. Ruggles (August 20): Noctua fennica Tausch. is very bad northeast of the Red River Valley.

Wisconsin

E. L. Chambers (August 25): The grasshoppers and variegated cutworm have continued to do unusually severe injury throughout the State to potatoes, tobacco, small grain, and other field crops, and these, coupled with the unusual/severe drought we are having in most of the State, have played havoc with our crops in Wisconsin this year. Owing to the very unusual season and severe drought, our corn is already going into the silo, and in the south central section over one-half of it has already been cut.

ntana

R. W. Gjullin (July): Pale western cutworm(Parosagrotis orthogonia Morr.) and army cutworm (Chorizagrotis auxiliaris Grote) moths are very abundant.

COTTON LEAF WORM (Alabama argillacea Hbn.)

ssissippi

State Plant Board, Press Release (August 3): No leaf worms have yet been found in Mississippi, but they are expected at any time.

WIREWORMS (Elateridae)\*

ew York

C. R. Crosby (July 30): Wireworms are causing considerable injury to oats at Clymer.

outh Carolina

W. J. Reid, jr. (August 17): Wireworms have been quite destructive during the past ten days to young cabbage plants. The crop was seeded directly in the field in hills, the usual method of planting cabbage during the fall months in this section. The wireworms attack the plants as soon as germination begins, often destroying all plants in the infested hill. From one to three wireworms have been found feeding on one group of plants. Fifty per cent of the plant stand has been destroyed on a ten-acre planting in the Charleston area.

WHITE-LINED SPHINX (Celerio lineata Fab.)

chigan

R. H. Pettit (August 7): We have an abundance of a hawk moth, Deilephila lineata Fab., this year all over Michigan. Each mail brings a number of specimens. As is well known the larvae of this moth feeds on purslane, a rather troublesome weed.

PAINTED LADY (Vanessa cardui L.)

ermont

H. L. Bailey (August 24): Larvae of the painted lady butterfly were reported on hollyhocks at Brattleboro.

nnesota

P. E. Derby (August 10): The Canada thistle webworms are moderately abundant at Barnum, Carlton County.

L. W. Orr (July 16): The thistle butterfly is abundant at Itasca Park, and there has been a considerable reduction of the growth of Canada thistle. It is also very abundant at Clarissa, in Todd County.

A. G. Ruggles and assistants (August): The thistle fly has been very destructive in Aitkin County. As far as the thistle fly is concerned it has done more good than harm.

---

\*Correction: I.P.S. Bulletin, Vol. 11, No. 5, Page 256.

Note on Heteroderes laurentii Guer. refers to George County, Miss. only.



RED SPIDER (Tetranychus telarius L.)

- Maine H. B. Peirson (August 24): Red spiders are on spruce, Crataegus, elm, yellow birch, oak, and amelanchier in many parts of the State.
- South Dakota H. C. Severin (August 20): The red spider is exceedingly abundant and injurious.
- Idaho C. Wakeland (August 20): The common red spider is extremely abundant, since the year is excessively dry. It is affecting practically all cultivated plants including shade trees and ornamentals. It has done very severe injury to potatoes and beans as well as to the crops ordinarily affected by it.
- Utah G. F. Knowlton (August 18): The common red spider has been damaging raspberries, corn, beans, chrysanthemum, dahlias, peas, roses, and tomatoes in various northern Utah localities.
- Oregon D. C. Mote (August 15): Orchard mites are unusually abundant this year and doing serious damage to pear foliage in the Willamette Valley. Reports from other sections of the State indicate this to be a favorable season for mites, damage being reported on apples, pears, raspberries, muskmelons, prunes, and strawberries.

PACIFIC RED SPIDER (Tetranychus pacificus McG.)

- California E. A. McGregor (August): It is of interest to record that during the period from April to July, inclusive, the Pacific red spider (Tetranychus pacificus McG.) occurred in unusual severity in central California, causing much damage to vineyard and deciduous fruit and ornamental trees. In early August, the predacious thrips, Scolothrips sexmaculatus Perg., ended the outbreak. This annual phenomenon in central California is very interesting, since toward the climax the thrips population builds up so rapidly that the biological control appears almost to amount to instant annihilation.

JAPANESE BEETLE (Popillia japonica Newm.)

- Delaware L. A. Stearns (August 24): Many reports of injury, especially on grape, in the vicinity of Wilmington.
- Ohio E. W. Mendenhall (August 21): It is reported that the Japanese beetle was found in Cleveland and Columbus in small numbers, on flowering plants. These were trapped by Japanese beetle scouts.

ASIATIC GARDEN BEETLE (Aserica castanea Arrow)

- Connecticut E. P. Felt (August 21): A specimen of the Japanese garden beetle, Aserica castanea Arrow, was taken at Stamford.



## CEREAL AND FORAGE - CROP INSECTS

WHEATHESSIAN FLY (Phytophaga destructor Say)

Ohio

J. S. Houser (August 22): The Hessian fly is moderately abundant. The average infestation in 1930 was 6.8 per cent; in 1931, 12.2 per cent. There has been more damage than for several years.

Indiana

J. J. Davis (August 22): The Hessian fly is moderately abundant in isolated localities.

Nebraska

M. H. Swenk (August 20): The Hessian fly is moderately abundant in southeastern Nebraska.

Kansas

H. R. Bryson (August 22): Dr. R. H. Painter reports finding eggs on wheat at the agronomy farm at Manhattan but that they were not especially abundant.

CORNEUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

New York

R. D. Glasgow (August 26): The European corn borer has been moderately abundant in sweet corn this year in Albany County.

Wisconsin

E. L. Chambers (August 18): Two spots in a 12-acre field of corn near the edge of Lake Michigan about 200 feet apart showed infestation with the corn borer. Three specimens were taken from one stalk, all above the ear. This is the first record of the corn borer in Wisconsin, (Mosel, Sheboygan County.)

CORN EAR WORM (Heliothis obsoleta Fab.)

West Virginia

L. M. Peairs (July 31): The corn ear worm is very abundant in Morgantown and generally over the State. Early injury to foliage and tassels was unusual.

Virginia

H. G. Walker (August 24): The corn ear worm was very injurious to sweet corn in the Norfolk district. Nearly all of the ears were destroyed by this insect.

North Carolina

Z. P. Metcalf (August): The corn ear worm is very abundant.

Georgia

C. H. Alden (August 22): The corn ear worm is moderately abundant. Many full-grown larvae have been found in roasting ears.

Ohio

E. W. Mendenhall (August 1): The corn ear worm is quite bad on sweet corn in the vicinity of Columbus and throughout southwestern Ohio.

- Illinois C. C. Compton (August): The corn ear worm infestations are showing up for the first time this year in mid-season sweet corn. The infestation runs from 3 to 12 per cent of the ears. Reported in Cook County as scarce to moderately abundant.
- Minnesota A. G. Ruggles (August 20): Reports are coming in of a very heavy infestation of the corn ear worm.
- South Dakota H. C. Severin (August 20): The corn ear worm is more serious than usual on sweet and field corn.
- Iowa C. J. Drake (August 3): The corn ear worm is extremely prevalent throughout the State.
- Missouri L. Haseman (August 24): Right now worms are far less abundant than would have been expected from the abundance of the first generation.
- Kansas H. R. Bryson (August 22): The corn ear worm is very abundant - almost 150 larvae per 100 ears at Manhattan. This insect has been a pest all season.
- Nebraska M. H. Swenk (August 20): The corn ear worm is moderately to very abundant in eastern Nebraska.
- Tennessee C. Benton (July): A very general infestation was observed attacking the developing tassel and upper leaves of field corn in Lincoln and adjacent counties. Many fields were 10 to 20 per cent infested. Most roasting ears were infested in late July.
- Oklahoma C. F. Stiles (August 24): The corn ear worm is moderately abundant in eastern and central Oklahoma. Some fields of rank cotton will be damaged.
- Mississippi C. Lyle and assistants (August): The corn ear worm is damaging corn considerably at the present time, especially in Grenada, Jones, and Tallahatchie Counties.
- State Plant Board, Press Release (August 3): The corn ear worm is generally distributed over the State, attacking corn and tomatoes. It was reported very abundant in Chickasaw, Lauderdale, and Lee Counties, and scarce in Adams County.
- Utah G. F. Knowlton (August 18): The corn ear worms are seriously abundant in all sweet corn fields and market corn examined this summer in northern Utah.

#### CHINCH BUG (Blissus leucopterus Say)

- Massachusetts A. I. Bourne (August 21): Quite recently our attention was called to a rather serious outbreak of the chinch bug in the town of Windsor in Berkshire County. This infestation is quite well

localized in a comparatively small area, but within that space the pest is very abundant. The surface of the ground was literally swarming with bugs of all stages of development. A small planting of corn in this area and a field of millet had already been seriously injured at the time our attention was called to the infestation.

T. H. Parks (August 22): The chinch bug is moderately abundant. It has increased since last year.

W. P. Flint (August 10): The weather of the summer thus far has been, on the whole, favorable to chinch bugs and they are increasing in abundance in the southern part of the State, with prospects of a considerable increase in damage next year. This also applies to the central Illinois area.

R. Hutson (August 24): Chinch bugs are moderately abundant in the lower tier of counties, of the lower peninsula.

A. G. Ruggles and assistants (August): Chinch bugs were reported as doing damage to barley in Goodhue County in the southeastern part of the State. (Abstract, J.A.H.)

H. C. Severin (August 20): The chinch bug is moderately abundant. Serious damage was escaped only because of the extreme drought and grasshoppers.

L. Haseman (August 25): The second generation in corn is quite abundant but not attracting the farmers' attention at present. Rains helped.

H. R. Bryson (August 22): The chinch bug is very abundant in the southeastern part of the State.

M. H. Swenk (August 20): The chinch bug is moderately abundant in some southern counties. There has been no commercial damage.

C. Benton (July): A considerable acreage of millet was seriously injured and some totally destroyed by the chinch bug during early July in Lincoln and Marshall Counties. The bugs were mostly in the last nymphal instar by July 15. They deserted millet fields by late July and scattered into corn. A small pop-corn patch near Fayetteville was destroyed and adjacent sorghum attacked by bugs migrating from a ruined millet field.

State Plant Board, Press Release (August 3): Chinch bugs were moderately abundant in one locality. They usually cause little injury in this State during seasons of abundant rainfall.



-432-

CORN LEAF APHID (Aphis maidis Fitch)

Kansas

H. R. Bryson (August 22): The corn leaf aphid is present in large numbers in some fields of kafir and corn in the State.

CLOVER

GREEN CLOVER WORM (Plathypena scabra Fab.)

North Carolina

Z. P. Metcalf (August): The green clover worm in the eastern part of the State is worse than I have ever seen it before.

CLOVER APHID (Anuraphis bakeri Cowan)

Oregon

L. P. Rockwood (August 4): A. bakeri is coming up, especially on late cut clover in Washington County. A. helichrysi Kalt. is probably not as abundant as usual in Malheur County.

CLOVER SEED MIDGE (Dasyneura leguminicola Lint.)

Oregon

L. P. Rockwood (August 4): Infested heads were moderately abundant in fields cut late for hay and wet by June rains. They were very scarce or absent in fields harvested for hay before the June rains.

CLOVER ROOT BORER (Hylastinus obscurus Marsham)

Oregon

Oregon Agricultural College, Insect Pest Report (July): The clover root borer is scarce in Coos County, moderately abundant and causing some injury in several clover fields in Washington County, and reported as moderately abundant in Yamhill County.

ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

Wyoming

A. G. Stephens (August 21): The alfalfa weevil is moderately abundant in the central part of the State.

Oregon

Oregon Agricultural College, Insect Pest Report (July): The alfalfa weevil is scarce in Baker Valley and doing damage. It is reported as moderately abundant in Jackson County.

GARDEN WEBWORM (Loxostege similalis Guen.)

Indiana

J. J. Davis (August 21): The garden webworm was reported, August 8-10, damaging alfalfa at Evansville, Princeton, and Rockport. At the last place it is reported that they destroyed a

7-acre field and then proceeded to an adjoining soybean field and were damaging this crop at the time of the report. They were also feeding on bull nettle and lamb's-quarters.

Illinois W. P. Flint (August 10): Alfalfa webworms are very abundant and destructive throughout south central and north central Illinois.

J. H. Bigger (August 18): At least 160 acres of alfalfa were severely damaged by this species in Pike, Scott, and Greene Counties, August 10-- 15. Reports came in by telephone and from personal consultation from many other fields. From 1,500 to 2,000 acres are estimated to have been damaged in Morgan, Scott, Greene, and Pike Counties.

North Dakota J. A. Munro (August 22): Reports from Stutsman, Steele, Cass, and Barnes Counties indicated this pest as of serious importance during July. Mustard, sweet clover, onions, beets, cabbage, and peas were badly damaged and in some cases completely destroyed.

Iowa C. J. Drake (August 3): The garden webworm, L. similalis, is extremely abundant in Iowa, and doing serious damage to alfalfa and to many truck crops. The outbreak is quite general and very widespread in the State.

Mississippi C. Lyle (August 25): A light infestation of L. similalis on cotton was reported from Cleveland on August 9.

#### ALFALFA CATERPILLAR (Eurythmus eurythene Boisd.)

Kentucky M. L. Didlake (August 24): E. eurythene butterflies are very abundant over alfalfa fields in Jefferson County.

North Dakota J. A. Munro (August 22): The alfalfa butterfly has been very noticeable this season, and many inquiries have been received from Traill, Barnes, and Pembina Counties since the last Insect Pest Survey report.

South Dakota H. C. Severin (August 20): The alfalfa caterpillar is apparently doing little damage, but butterflies are exceedingly abundant.

Utah G. F. Knowlton (August 18): The alfalfa caterpillar is doing moderate damage to alfalfa in northern Utah areas. Adult butterflies are very abundant at the present time.

#### CLOVER SEED CHALCID (Bruchophagus funebris How.)

Oregon L. F. Rockwood (August 4): Adults are not very abundant in the fields, July 29 - 31. Emergence from early-set seed pods is probably just beginning.

Indiana J. J. Davis (August 21): Considerable yellowing of alfalfa foliage was reported from South Bend, July 31. There is every evidence that this trouble is caused by leafhoppers.

### SOYBEAN

#### GREEN CLOVER WORM (Plathypena scabra Fab.)

Virginia H. G. Walter (August 24): The green clover worm has been causing severe damage to soybeans at various places in this part of the State.

Mississippi C. Lyle (August 25): Several larvae, tentatively identified by J. M. Langston as Plathypena scabra, were collected on soybeans at Boyle, Bolivar County, on August 9. The infestation was light.

#### ALFALFA LOOPER (Autographa gamma californica Spoy.)

Illinois J. H. Bigger (August 19): The alfalfa looper is very abundant in a field of soybeans in connection with grasshoppers in Greene County. About 60 per cent of the leaf surface in the field has been destroyed by the two pests. The damage is serious because the crop is not ready to cut.

#### VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Florida R. N. Lobbell (July 22): The conspicuous feature has been the very marked increase of parasites over last year. These are being bred out from thousands of caterpillars and are not yet determined. This season has been quite dry so far while last year was exceptionally rainy. Precipitation at the Station in 1930: May, 4.43 inches; June, 19.61 inches; July 1 to 20, 3.99 inches. Precipitation in 1931: May, 3.16 inches; June, 0.59 inch; July 1 to 20, 1.32 inches; a total difference of 23.96 inches.

Louisiana W. E. Hinds (August 21): Soybean worms, A. gemmatilis, as far north as Rapides Parish are doing considerable damage.

#### BEAN LEAF ROLLER (Goniurus proteus L.)

Florida R. N. Lobbell (July): The interesting feature has been that while in May and early June the bean leaf roller was abundant on snap beans and soy beans on both muck and custard apple lands, by this month they have almost completely disappeared from the muck lands but remain in fair numbers on the sandy custard apple ridges along the lake where they are feeding on soybeans.



BEAN LEAF BEETLE (Ceratomya trifurcata Forst.)

Mississippi

W. E. Hinds (August 21): C. trifurcata is very abundant on soybeans at Baton Rouge.

VETCH

A BRUCHID (Mylobris brachialis Fahraeus)\*

SORGHUM

CORN LEAF APHID (Aphis maidis Fitch)

Mississippi

State Plant Board, Press Release (August 3): The corn leaf aphids were very abundant on sorghum in the Delta.

GRASS

SOD WEBWORMS (Crambus spp.)

Virginia

W. S. Hough (August 27): Sod webworms, Crambus spp., have been doing considerable damage on golf greens in northern Virginia.

C. R. Wiley (August 28): Specimens of grass worms, Crambus spp., were received from Monterey, Highland County, August 14. Reported as doing considerable damage to lawns.

Ohio

E. W. Mendenhall (August 10): Sod webworms are doing considerable damage to lawns and golf courses at Columbus and throughout central Ohio. We have not yet identified them as far as the species.

J. S. Houser (August 22): Sod webworms have caused excessive damage to lawns, fairways, putting greens, and, in fact, turf of all kinds in Ohio. At Wooster, August 15 - 22, there was a very heavy flight of moths. Some parasites have been observed. It is the worst outbreak on record.

T. H. Parks (August 24): Injury from Crambus larvae to lawns and golf courses continued through the first half of August but has now subsided. Moths of C. trisectus Walk. and C. teterrellus Zinck. were caught at a trap light in large numbers during the entire month. Some lawns were destroyed by the larvae during July and early August.

---

Acknowledgment: The note on this insect in the Insect Pest Survey Bulletin, Volume 11, No. 6, page 347, should be credited to L. J. Bottiner.

Indiana

J. J. Davis (August 21): Webworms, Crambidae, continued as outstanding pests in lawns and golf greens, our last report having been received August 13. Localities reporting trouble since July 31 are as follows: Brookville, South Bend, Winchester, Fountain City, Martinsville, Indianapolis, Muncie, Aurora, Decatur, Salem, Milroy, Franklin, and Cleveland. The adults were out in enormous numbers at Lafayette the night of August 4.

Illinois

J. H. Bigger (August 19): Adults of C. teterollus Zinck. were abundant August 9 - 17.

Kentucky

M. L. Didlake (August 25): There are numerous complaints that the sod webworm is injuring lawns, pastures, golf links, and orchard grass in Fayette, Kenton, Lewis, Woodford, Fleming, and Greenup Counties. Around Lexington the second brood of moths was flying all through August; they were so numerous that they covered radiators and windshields of automobiles and made almost solid masses on lighted windows in the country. Many were collected on August 4 and 15.

Iowa

H. E. Jaques (August 27): Sod webworms have been very destructive to lawns and to some pastures particularly in southern Iowa. Chickens and blackbirds have been active in destroying the worms.

Missouri

L. Haseman (August 25): Crambids continue to be unusually abundant at Columbia. Moths coming to lights.

Tennessee

C. M. Packard and W. B. Noble (July): Widespread injury was done to lawns and golf greens by sod webworms this month. Several species were involved as shown by our rearings, probably C. mutabilis Clem., C. trisectus Walk., and C. caliginosellus Clem., although authentic determinations have not yet been received from Washington. Wild birds and chickens have been observed digging up and eating the larvae. A dipterous parasite was common but not present in controlling numbers.

C. Benton (July): Injury to corn continued into early July, when a few larvae were still attacking corn roots in infested fields near Fayetteville.

#### TIGER MOTH (Apantesis phyllira Drury)

Tennessee

and  
Kentucky

C. Benton (July): Local outbreaks of the second-brood larvae of the tiger moth, A. phyllira, occurred throughout the same general area in southern Tennessee as previously reported for the first brood. Major injury was done in late June and early July. By July 15 most of the larvae had pupated. First moths from the brood were taken in the field on July 7. Moths were present almost nightly at lights in Fayetteville to July 27. Most injury

was to grass lots and pastures with some caused by migration to corn, melons, cotton, cowpeas, tobacco, strawberries, and gardens. The worst damage was in Marshall County where there were only a few isolated outbreaks of the first brood. Similar heavy damage caused by the second brood to several hundred acres of corn and other crops, reported by J. U. Gilmore and J. Milam, in Montgomery and Robinson Counties, Tenn., and Christian and Todd Counties, Ky. They reported only a single known first-brood outbreak in a pasture near the west edge of Robinson County.

#### GEOMETRID LARVA (Geometridae)

Island A. E. Stone (July 29): There is an interesting outbreak of geometrid larvae, possibly a species of the genus *Cosmobia*, in the town of East Greenwich. It is stripping indigo, sweet fern, bayberry, and huckleberries over a considerable area of pasture land. So far no moths have been secured.

#### LEAFHOPPERS (Cicadellidae)

slm M. H. Swenk (July 15 to August 1): On the night of July 19 there was an enormous flight of leafhoppers in Omaha. The insects were so numerous that they interfered with automobile and street car traffic, and in some cases made necessary the darkening of buildings. The species chiefly concerned seemed to be the inimical leafhopper (*Deltocorhalus inimicus* Say) and the bog leafhopper (*Heliochara communis* Fitch).

#### CHUFA

#### BILLBUGS (*Calendra* spp.)

ssipyi H. Dietrich (August 19): Billbugs (*Calendra*, probably 2 species) have practically destroyed a 2-acre field of chufa on rather low ground in the southern part of Perry County on August 14.



## FRUIT INSECTS

### APPLE

#### WOOLLY APHID (Eriosoma lanigerum Hausm.)

Washington

E. J. Newcomer (August 21): The woolly aphid is probably more numerous than during any season in the last ten or twelve years in spite of the great abundance of chrysopids and syrphids.

#### CODLING MOTH (Carpocapsa pomonella L.)

New York

N.Y. State Coll. Agr., Weekly News Letter (August): Rather heavy dropping as result of the codling moth is reported quite generally from the upper Hudson River Valley and western New York. In Oswego County codling moth injury was more serious this year than during the past three years. (Abstract, J.A.H.)

Delaware

L. A. Stearns (August 4): First second brood larvae spun up in the insectary today. (Aug. 24): First and second brood moths emerged at Bridgeville August 21. Infestation is extremely variable this year.

Virginia

C. R. Willey (August 28): This insect is fairly abundant all over the eastern and southern sections of the State.

Georgia

C. H. Alden (August 22): The codling moth is very abundant in Cornelia, the injury being severe in some orchards. Third generation moths are now laying eggs. Broods overlap.

Ohio

T. H. Parks (August 24): The codling moth will not very seriously injure sprayed apples except in Lawrence County, southern Ohio. In that county two extra cover sprays are bringing the fruit through with fewer worms than last year but with many "stings" on the fruit.

Indiana

J. J. Davis (August 21): Codling moth reports were very bad at Hobart, August 3. (August 22): The codling moth is moderately abundant throughout the State.

Illinois

W. P. Flint (August 10): Southern Illinois- There has been a big increase in infestation in the Johnson County area in the past two weeks, some sprayed orchards now showing 40 to 50 per cent infestation. There has been a moderate increase during the past week both in moth emergence and in bait-jar catches. Central Illinois- Collections under bands have fluctuated slightly during the past week but on the whole have shown about the same level as for the last two weeks. More than 3,000 larvae were taken under 120 bands in the Urbana area this week. There has been an increase in the numbers of pupae found under bands and very heavy emergence of adults is

taking place at the present time (Aug. 8). (Week ending August 15): Southern Illinois- Mr. Chandler reports a heavy emergence of moths beginning about August 4 and a heavy catch of moths in his bait jars. Central Illinois- There has been an increase in emergence in central Illinois during the last several days but a decided drop in the numbers of larvae taken under bands. The number taken under 120 bands this week was more than 1,000 less than the number taken under the same number of bands last week. It seems likely that the cool weather just passed will stop pupation, as usually happens when a cool period of this sort occurs at this time of the year.

Michigan

R. Hutson (August 24): The codling moth is very abundant.

Wisconsin

E. L. Chambers (August 24): The codling moth is moderately abundant. This insect is very abundant where spraying is not done.

Missouri

L. Haseman (July and August): A peak of second-brood moths occurred between July 10 and 15 and on July 25 evidence of the second peak was showing up. The pest is very serious again this summer. Moths of the third generation were emerging in central Missouri and some of their worms beginning to enter fruit on August 25.

Nebraska

M. H. Swenk (July 15 - Aug. 1): The codling moth of the first brood started emerging July 4, reached the crest of emergence on July 15, and they are now largely out. Egg laying began on July 13, and the first-brood larvae hatched on July 16, which is 4 days earlier than in 1930, 6 days earlier than in 1929, and 11 days earlier than in 1928.

Nevada

G. G. Schweis (August 21): The unsprayed apples are all wormy in the western part of the State.

Washington

Ortho News, Vol. 3, No. 8 (August 20): The first-brood moth flight this year showed two fairly distinct peak periods, the first coming about the middle of May and the second during the last week of that month. The second-brood flight has shown a series of "peaks," the two heaviest and most sustained coming during the last week in July and about the middle of August, respectively. There have been in addition several intermittent high catches, together with moderately good catches throughout the entire second-brood period, from about the 1st of July up to the present time.

In general the second-brood has far exceeded expectation, being the heaviest flight in many years, making even the season of 1929 look ordinary by comparison. It remains to be seen just what the third brood will produce.

Oregon

D. C. Mote (August 15): B. G. Thompson reports the peak of egg laying by the second brood. Recent cool nights have prevented much egg laying.

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

New York

N.Y. State Coll. Agr., Weekly News Letter (August): The apple and thorn skeletonizer seriously affected many orchards in Niagara County. (Abstract, J.A.H.)

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Ohio

E. W. Mendenhall (August 14): The yellow-necked caterpillar is doing some damage to apple stock in nurseries in Morgan County.

T. H. Parks (August 24): The yellow-necked caterpillars were sent in August 21 with the statement that they were attacking apple foliage in a Jefferson County orchard.

APPLE LEAFHOPPERS (Cicadellidae)

Massachusetts

Massachusetts Fruit Growers' Association, the Pest Situation (August 1): Leafhoppers have been very abundant generally, with especially heavy infestation in southeastern Massachusetts. The hatching period of the first brood was long drawn out so that it was often impossible to control the insects by the use of one spraying. Many growers secured good control by adding nicotine to the calyx and first cover sprays.

Connecticut

P. Garman (August 21): The rose leafhopper (Emboia rosae L.) appeared in abundance in June, became fairly abundant in July, and decreased rapidly toward the middle of the month. Second-brood nymphs were present only in a few orchards and there in very small numbers.

Delaware

L. A. Stearns (August 24): Apple leafhoppers are still rather abundant throughout the State.

North Carolina

Z. P. Metcalf (August): Apple leafhoppers are very abundant in eastern North Carolina.

Ohio

T. H. Parks (August 24): Apple leafhoppers are more abundant than usual on apple foliage.

APPLE LACE BUG (Corythucha coelata Uhl.)

Oregon

Oregon Agr. Coll., Insect Pest Report (July): Apple lace bugs are very abundant throughout Yamhill County on apples.



SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

- Georgia C. H. Alden (August 22): The San Jose scale is scarce in Cornelia..
- Ohio E. W. Mendenhall (August 14): The infestation is greater in southeastern Ohio than it has been and it will mean a little harder fight to keep it in check.
- Indiana J. J. Davis (August 22): The San Jose scale is moderately abundant throughout the State, especially in the southern part of the State.
- Illinois W. P. Flint (August 15): Infestation has been higher in both central and southern Illinois during the last few weeks. There will probably be a considerable number of heavily infested orchards by the end of the season.
- Wisconsin E. L. Chambers (August 24): The San Jose scale is moderately abundant. Several additional infested areas have been discovered.
- Missouri L. Haseman (August 25): The San Jose scale has shown serious increase during the month. Earlier it was scarce.
- Mississippi State Plant Board (August 3): The San Jose scale is doing considerable damage to peach and plum trees throughout the State.
- Oregon Oregon Agr. Coll., Insect Pest Report (July): This scale is moderately abundant throughout the State and was reported as very abundant in Morrow County.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

- Massachusetts Massachusetts Fruit Growers' Association, The Pest Situation (August 1): Apple maggot flies were first observed the last few days of June and by July 8 to 10 were beginning to appear in numbers.
- New York N. Y. State Coll. Agr., Weekly News Letter (August): During the first week in August apple maggots were ovipositing in the Hudson River Valley. (Abstract, J.A.H.)

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

- Massachusetts Massachusetts Fruit Growers' Association, The Pest Situation (August 1): The apple curculio is reported to be very abundant in some western orchards.
- New York N. Y. State Coll. Agr., Weekly News Letter (August 17): The injury caused by the feeding of the new generation of the apple curculio adults is severe in several Essex County orchards. The beetles are somewhat susceptible to poisons at this stage. The varieties most severely attacked are Tolman Sweet, Wealthy, and Spy.

WESTERN ROSE-CHAPER (Macroductylus uniformis Horn)

Arizona

C. D. Lebert (July 28): Considerable injury on apple trees at Ft. Huachuca, July 14.

RED SPIDER (Tetranychus telarius L.)

Pacific

Northwest

Ortho News, Vol. 3, No. 7. (August 7): It is not a difficult matter at the present time to pick out orchards severely infested with the two-spotted mite, because of the browning, rust, or dust covered foliage.

Oregon

Oreg. Agr. Coll., Insect Pest Report: The red spider is very abundant, mostly on mountain ash in Baker County and on pears and apples throughout Jackson County. Moderately abundant in Douglas County and on pears and strawberries in Josephine County.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

P. Garman (August 21): The third brood of the oriental peach moth has not yet appeared in force. What few early peaches have been picked seem to be fairly clean.

Rhode Island

A. E. Steffe (July 28): The oriental fruit moth is moderately abundant.

New York

N. Y. State Coll. Agr., Weekly News Letter (August): Oriental peach moth infestation in fruit of early peach varieties seems to be heavier than last year in Dutchess County, while in Niagara County there was considerable wormy peach fruit and quinces were riddled as usual. (Abstract, J.A.H.)

Delaware

L. A. Stearns (August 24): Parasitism of the first brood of the oriental fruit moth was light, 13 per cent; of the second brood heavy, 80 per cent, by Macrocentrus sp. Infestation of early peaches was light.

Pennsylvania

J. R. Stear (August 24): The oriental fruit moth is scarce. There has been practically no terminal injury on 300 2-year-old trees.

West Virginia

L. M. Peairs (July 31): The oriental fruit moth is scarce in various sections, much less abundant than in 1929.

Virginia

W. S. Hough and L. R. Cagle (August 24): The oriental fruit moth is moderately abundant at Vienna but scarce at Roanoke.

orgia

O. I. Snapp (August 20): Less than one-half of 1 per cent of the latest maturing commercial variety of peaches was infested by this insect at Fort Valley this year.

C. H. Alden (August 22): The oriental fruit moth is scarce at Cornelia. Only 3.3 per cent is wormy in unsprayed plats as compared with 11.5 per cent in 1930.

io

T. H. Parks (August 22): The oriental fruit moth is moderately abundant. It is most common in lake-shore areas.

diana

J. J. Davis (August 22): The oriental fruit moth is moderately abundant throughout the State.

ilinois

W. P. Flint (August): August 10, southern Illinois- There has been a slight increase in the visible infestation of peaches in Pulaski County. All growers of Slappy peaches in this section report fruit (now all picked) much less infested than in 1929 but still with some little injury showing. In Union, Jackson, Johnson, and Marion Counties increase, if any, was too slight to be noticed. No recent twig injury in any county. To date can see no possibility of commercial damage to Elberta unless it be in Pulaski County. Central Illinois- So far this year no oriental fruit moth infestation has been found in the Urbana section. There has been an increase in infestation in some of the areas north of Pulaski County, there being a slight increase in the Centralia area and a considerable increase in one area in the orchard section in Cumberland County. Week ending August 15, southern Illinois--oriental fruit moth infestation in fruit was shown by actual checks of 8,000 peaches in one of the heaviest infested orchards in the State to be 6 to 10 per cent, the latter being in the unsprayed check blocks. Counts made by Mr. Chandler of visible infestation showed from 0.6 to 4.3 per cent. In Jackson and Union Counties one to four days before picking Elberta, no orchards were found showing more than one-half of 1 per cent visible infestation. Fresh twig entrances were found August 14. Bait-jar catches have shown an increase since August 1.

S. C. Chandler (August 14): Counts made in peach orchards in Pulaski County of the oriental fruit moth just before picking show 0.6 to 4.3 per cent visible infestation in the fruit. In Jackson and Union County no orchard was found with over one-half of 1 per cent infestation.

ansas

D. Isely (August 24): Heavy infestation of the oriental fruit moth has been found on peaches in Benton County, and a light infestation in Washington County.

ssissippi

C. Lyle and assistants (August): Mr. R. E. Doone reports that this insect is very abundant in Lee County, some orchards showing serious twig injury. (Abstract, J.A.H.)



PEACH TWIG BORER (Anarsia lineatella Zell.)

California S. Lockwood (July 27): The peach twig borer has been more common than ordinarily experienced in the Sacramento Valley counties where canning and fresh peaches are raised extensively. Abandoned or neglected orchards have been largely responsible for this increased population.

PEACH BORER (Sanninoides exitiosa Say)

New York N. Y. St to Coll. Agr., Weekly News Letter (August): During the week preceding August 22 the peach-tree borer was entering peach and prune trees in Niagara County. (Abstract, J.A.H.)

North Carolina Z. P. Metcalf (August): The peach borer is very abundant. The lesser peach borer, Stenopoma pictipes G. & G. occurs on flowering peach.

Georgia O. I. Snapp (August 20): The first adult of the season emerged on August 6. This is later than usual. Oviposition began on August 12 which was 12 days later than the first oviposition last year. (August 20): Oviposition is now fairly heavy. One female deposited 475 eggs in 24 hours. They have not yet begun to hatch.

C. H. Allen (August 22): The peach borer is scarce in Cornelia. A few moths are now emerging.

Mississippi C. Lyle and assistants (August): The peach borer was reported as very abundant in Union, Meridian, Tate, and Panola Counties. (Abstract, J.A.H.)

State Plant Board, Press Release (August 3): According to reports the peach-tree borer and the San Jose scale are doing considerable damage to peach and plum trees throughout the State.

Utah R. F. Krompton (August 18): The peach-tree borer is damaging untreated peach trees in Boulder and Davis County orchards.

PLUM CURCULIO (Conotrachelus pomorum Host.)

Massachusetts Mass. Fruit Growers' Association, The Pest Situation (August 1): The curculio stands out in front among insect pests. In many orchards it has survived the spray program used, with considerable success. This was in large measure due to interference by weather conditions at the time of special applications for its control.

Delaware L. A. Stearns (August 3): In the insectary the first mature second-brood grubs commenced to leave peaches. Source of both Bridgeville and Cornell material, Bridgeville. (August 24): Second-brood grubs of the plum curculio are emerging from peaches in the southern two-brooded section of the State.

ew York

N. Y. State Coll. Agr., Weekly News Letter (August): The new generation of plum curculio beetles made its appearance during the first week in August in the lower Hudson River Valley. During the second week in August they were observed in the upper Hudson River Valley. (Abstract, J.A.H.)

W. S. Hough and L. R. Cagle (August 24): The plum curculio is scarce, although it has been found to be moderately abundant in a few instances.

orgia

O. I. Snapp (August 20): First-brood adults are depositing very few eggs this year. Second-brood larvae did not begin to appear in fruit in the field until the last picking of Elberta. The second brood was very small this year, and the entire crop of Georgia peaches was harvested with practically no damage from the curculio. We did not receive a single complaint of wormy peaches from a treated orchard. Of 58,196 peaches cut open and examined in one orchard only 365, or 0.7 per cent, were infested by the curculio. Of 5,547 peaches cut open and examined in another orchard, 52, or 1.0 per cent, were infested by the curculio, and of 3,278 peaches cut open and examined in a third orchard, 44, or 1.3 per cent, were infested; 46,821 peaches were cut open and examined from trees in the three orchards and of these only 361, or an average of 0.3 per cent, were infested by the curculio.

s

T. H. Parks (August 22): The plum curculio is scarce. It has been scarce all the year. (August 24): The plum curculio still continues to be very scarce in all parts of the State.

iana

J. J. Davis (August 22): The plum curculio is moderately abundant, scattered in isolated regions.

linois

W. P. Flint (August): August 10, southern Illinois - Orchard counts and observations continue to indicate light infestation. An orchard in Pulaski County showed greater infestation in Belle of Georgia than in Elberta and Hale, all being sprayed and dusted at the same time. Mr. Chandler reports a marked increase in numbers of adult curculios jarred from trees in the southern Illinois section the last of this week. (August 8): Counts and observations indicate that curculio infestation this season is the lightest for several years.

Week ending August 15, southern Illinois - Peach orchards in the extreme southern part of the State show a very low percentage of infestation. Actual examination of several thousand peaches in experimental blocks show from 4 to 9 per cent infestation by the curculio, the latter percentage of infestation being in unsprayed checks.

- Michigan R. Hutson (August 24): The plum curculio is moderately abundant.
- Wisconsin E. L. Chambers and assistants (July): The plum curculio was reported as very abundant in Crawford, Eau Claire, La Crosse, Manitowoc, Sault, Sheboygan, and Vernon Counties. (Abstract, J.A.H.)
- Missouri L. Haseman (August 25): The first generation of adults of the plum curculio have continued to feed and oviposit later than usual in stone fruits at Columbia. Some worms are not more than two-thirds grown now (August 24) in plums.
- Georgia C. H. Allen (August 22): The plum curculio is scarce in Cornelia. It has been almost absent, only 0.05 per cent of the fruit having been ~~very~~ infested in 1931; 38.2 per cent were worm in unsprayed plots in 1930.
- Kansas H. R. Bryson (August 22): The plum curculio is moderately abundant. It is very injurious to plums and peaches at Manhattan.
- Mississippi State Plant Board, Press Release (August 3): The plum curculio has done some damage to peaches and plums, especially on unsprayed trees, although this insect has been less numerous than usual.
- WHITE PEACH SCALE (Aulacaspis pertarone Targ.)
- Virginia C. R. Willey (August 28): There is considerable infestation of the West Indian peach scale in Richmond. A number of complaints have followed where peach, plum, and cherry were badly infested. Specimens have been taken on lilac and, recently, on catalpa.
- SNOWY TREE CRICKET (Oecanthus nivus DeG.)
- Louisiana W. E. Hinds (August 21): Snowy tree crickets in Ouachita and Jackson Parishes are laying eggs in peach, pecan, and crepe myrtle. Do not know the abundance.



## PEAR

### PEAR PSYLLA (Psyllia pyricola Foerst.)

New York N. Y. State Coll. Agr., Weekly News Letter (August): By the middle of the month the pear psylla began hatching rapidly in western New York. (Abstract, J.A.H.)

### PEAR SLUG (Eriocampoides limacina Retz.)

Massachusetts J. V. Schaffner, Jr. (August 21): At Brookline I noted one row of nine large pear trees with the foliage almost completely browned by this insect.

### PEAR LEAF BLISTER MITE (Trioptyx pyri Pgst.)

Vermont H. L. Bailey (August 24): The pear leaf blister mite has been reported as plentiful in the vicinity of Montpelier.

Utah G. F. Knowlton (August 18): The pear leaf blister mite has caused damage in occasional orchards in many parts of Utah.

Oregon Oreg. Agr. Coll., Insect Pest Report (July): Don C. Mote reports orchard mites to be unusually abundant this year and doing serious damage to pear foliage in the Willamette Valley. Reports from other sections of the State indicate this to be a favorable season for mites, damage being reported on apples, pears, raspberries, muskmelons, prunes, and strawberries.

## QUINCE

### QUINCE CURCULIO (Conotrachelus crataegi Walsh)

New York N. Y. State Coll. Agr., Weekly News Letter (August): Considerable injury due to the quince curculio was observed on pears that were picked by the middle of the month. (Abstract, J. A. H.)

### CHERRY FRUIT FLY (Rhagoletis cingulata Loew)

Oregon D. C. Mote (August 15): S. C. Jones reports the fly still on the wing August 6. Maggots have nearly all pupated, the remaining maggots being nearly full grown.

### PEAR SLUG (Eriocampoides limacina Retz.)

Oregon Oreg. Agr. Coll. Insect Pest Report (July): Pear slugs are moderately abundant on cherries in Grant County. This insect is very abundant over Morrow County.

PLUM

RED SPIDER (Tetranychus telarius L.)

Washington

E. J. Newcomer (August 21): The two-spotted mite is doing more damage than at any time in the last twelve years. Many prune and cherry trees are already defoliated, and there is also occasional damage to apple and pear trees.

RASPBERRY

RASPBERRY CANE BORER (Oberea bimaculata Oliv.)

New York

C. R. Crosby (July): Infested shoots of raspberries were received from Bernhard's Bay.

W. E. Blauvelt (June 30 to July 29): Oberea bimaculata was found at Hornell, Clayton, Oneonta, North Hornell, Franklin, Rushford and Upper Jay, N. Y. Specimens were received from these localities.

RASPBERRY FRUIT WORM (Eyturus unicolor Say)

Washington

J. Wilcox (August 19): Berries are past the commercial picking season. At the first of the picking season Wm. W. Baker found 50 per cent of the berries infested. Most of the larvae have entered the soil; in a small count 50 per cent were larva and 50 per cent pupae. No adults were found. Abundance is about the same as for the last three years. Reported on Loganberries at Christopher.

A CURCULIONID (Geoderces melanothrix Kby.)

Washington

Wm. W. Baker (April): Practically all the buds were eaten off in most of the canes in portions of the field. It has been far more numerous, at least in some fields, as compared with the average year. It was reported in Fuyallup.

LOGANBERRY CROWN BORER (Bembecia marginata Harr.)

Oregon

Oreg. Agr. Coll., Insect Pest Report (July): The loganberry crown borer is scarce on raspberries in Polk County. It is very abundant in Yamhill County.

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Indiana

J. J. Davis (August 21): The red humped apple caterpillar (Schizura concinna) was abundant and defoliating blackberry at Rensselaer August 19.

GRAPES

SPOTTED PELIDNOTA (Pelidnota punctata L.)

Connecticut

W. E. Britton (August 24): More abundant than usual on grapes at Bridgeport and Hartford.

GRAPE LEAF FOLDER (Deania funeralis Hbn.)

Virginia

H. G. Walker (August 24): The grape leaf folder has done considerable damage to grapes in this area. Some of the vines in small home gardens have been nearly defoliated by this pest.

Mississippi

J. Milton (August 22): On July 27 the grape leaf folder was doing serious damage to grapes at Belmont. Practically every leaf was infested with this pest.

ROSE LEAFHOPPER (Empoa rosae L.)

Ohio

E. W. Mendenhall (August 5): I find that the rose leafhopper (Empoa rosae L.) is quite bad on grape leaves and doing some damage in Newark and in central Ohio.

GRAPE LEAF SKELETONIZER (Harrisina americana Guér.)

Arizona

C. D. Lebert (July 28): Quite numerous in spots throughout the valley with severe grape foliage injury at several places.

EIGHT-SPOTTED FORESTER (Alupia octomaculata Fab.)

Maine

H. B. Feirson (August 24): The eight-spotted forester was reported feeding on maple in Portland.

GRAPE LEAFHOPPER (Erythroneura comae Say)

Virginia

H. G. Walker (August 24): The grape leafhopper is quite abundant on grapes in the Norfolk area.

Mississippi

H. Dietrich (August 19): The grape leafhopper has become very abundant on grape at Iucedale.

Utah

G. F. Knowlton (August 8): The grape leafhopper is seriously damaging grapes and Virginia creeper at Riverdale.

California

S. Lockwood (July 27): The grape leafhopper has not been responsible for as much damage in Kern County as in other counties in the San Joaquin Valley. Fresno, Madera, and parts of other northern counties of this valley have suffered extremely. The tonnage of marketable grapes will be reduced by a rather large percentage because of this insect and the hot, dry weather experienced this summer.



E. O. Essig (August 20): The grape leafhoppers are abundant in Sacramento and San Joaquin Valleys in May, June, July, and August.

PACIFIC RED SPIDER (Tetranychus pacificus McG.)

California E. O. Essig (August 20): Red spiders (Tetranychus pacificus McG.) are abundant on grapes in San Joaquin and Stanislaus Counties.

PECAN

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Mississippi H. Dietrich (August 19): The absence of injury to pecans at Lucedale by the hickory shuck worm is noticeable.

R. P. Colmer (August 19): The hickory shuck worm is moderately abundant on pecan in eastern Jackson County.

H. Gladney (August 20): The pecan shuck worm is moderately abundant on pecans at Ocean Springs.

State Plant Board, Press Release (August 3): The pecan shuck worm was reported to be scarce except in one locality, where it caused considerable dropping of the small nuts.

A CASE-BEARER (Acrobasis palliolella Rag.)

Mississippi R. P. Colmer (August 19): Leaf case bearers are moderately abundant on pecans.

H. Dietrich (August 19): The pecan leaf case-bearer (Acrobasis palliolella) newly-hatched larvae have done considerable injury to foliage in orchard of pecans at Lucedale.

PECAN NUT CASE BEARER (Acrobasis caryae Grote)

Mississippi R. P. Colmer (August 19): There has been no damage this year from the pecan nut case bearer in this section of the State (eastern Jackson County).

PECAN CIGAR CASE-BEARER (Coleophora caryaefoliella Clem)

Mississippi H. Gladney (August 20): The pecan cigar case bearer is moderately abundant on pecans at Ocean Springs.

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi C. Lyle and assistants (August): The walnut caterpillar is remarkably scarce through the pecan-growing sections of the State. The first colony was observed in Lincoln County on August

FALL WEBWORM (Hlyphantria cunea Drury)

Mississippi C. Lyle and assistants (August): Fall webworms are unusually scarce in Mississippi.

PECAN WEEVIL (Curculio carvæ Horn)

Georgia T. L. Bissell (August 27): Adult weevils began puncturing nuts about July 25 at Milner, Ga. Injury is light in Schley and Stuart pecans at Strouds Crossroads in Monroe Co., Ga.

A PECAN APHID (Monellia costalis Fab.)

Georgia T. L. Bissell (August 27): Aphids are exceedingly scarce on pecans.

Mississippi H. Dietrich (August 19): The black-margined aphid (Monellia costalis) has become very abundant on pecans at Leakesville, Leaf, and Lucedale, the leaves being covered with the black fungus growing in the honeydew. At Leakesville a woman had a lot of ornamental shrubbery planted under pecans, the leaves of which were all covered with the black fungus growing in the honeydew dripping from the pecans.

BLACK PECAN APHID (Myzocallis fumipennellus Fitch)

Georgia T. L. Bissell (August 27): Aphids are exceedingly scarce. Has been negligible injury in the Experiment area this year on pecans.

Mississippi C. Lyle and assistants (August): This aphid has been so scarce that no control practice has been necessary in many localities; however, it was appearing about the third week in the month in George and Stone Counties. (Abstract, J.A.H.)

FLAT-HEADED APPLE TREE BORER (Chrysobothris fenorata Oliv.)

Mississippi H. Dietrich (August 19): The flat-headed apple tree borer adults have been flying all the month in increasing numbers and can be beaten from neglected pecan trees.

CODLING MOTH (Carpocapsa pomonella L.)

California Monthly News Letter, Los Angeles County Agricultural Commissioner (July 15): Walnut growers in Los Angeles County this year sprayed over 4,500 acres of walnuts for control of the codling moth according to H. H. Wilcomb, Deputy Agricultural Commissioner. Considerable crop loss is caused by this pest each season and it has been definitely proved that its control is an economic practice.

CITRUS

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

Florida

E. W. Berger (August 24): The Florida red scale is very abundant. Specimens have been received from a correspondent.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida

E. W. Berger (August 24): The purple scale is very abundant. Specimens were received from a nursery inspector.

CHAFF SCALE (Parlatoria pergandii Comst.)

Florida

E. W. Berger (August 24): The chaff scale is very abundant at Babson Park. Specimens were received from a nursery.

GLOVER'S SCALE (Lepidosaphes gloverii Pack.)

Florida

E. W. Berger (August 24): The long scale is very abundant at Babson Park. Specimens were received from an inspector.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Florida

E. W. Berger (August 24): The cottony cushion scale is moderately abundant in various local outbreaks over the State, mostly in the southeastern part. Specimens were received from correspondents. Vedralia is moderately abundant.

CITROPHILUS MEALYBUG (Pseudococcus gahani Green)

California

Monthly News Letter, Los Angeles County Agricultural Commissioner (July 15): Some three years ago internal parasites of the citrophilus mealybug were brought in from Australia and established here by Prof. Harry S. Smith of the University of California Citrus Experiment Station at Riverside. These insects maintain themselves throughout the winter without artificial aid and have cut the mealybug population almost to the vanishing point in some areas and have maintained a wonderfully effective control in all sections.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Mississippi

State Plant Board, Press Release (August 3): The citrus whitefly was reported as injuring citrus and ornamental plants.



FIRE ANT (Solenopsis geminata Fab.)

zona

C. D. Lebert (July 31): The bud unions of young citrus trees in the valley have been covered in many cases. Gummosis has resulted at the bud union. The ants have apparently been attracted to the gum exudation which they have removed together with the bark, thus seriously and in many cases completely girdling the trees.

FALSE CHINCH BUG (Nysius ericae Schill.)

ifornia

Monthly News Letter, Los Angeles County Agricultural Commission (July 15): The false chinch bug, Nysius ericae, a close relative to the well-known chinch bug which is a serious insect enemy of the wheat crop of North America, has recently turned its attention to young citrus trees according to H. M. Armitage, Deputy Agricultural Commissioner of Los Angeles County. Normally the species breeds and feeds in the native grasslands where it multiplies in countless numbers. With the drying up of all native weed growth, due to the prevailing summer temperatures they have apparently been forced to seek other food. In several instances this insect has been reported as seriously damaging year-old citrus trees, both lemon and orange, usually replants in old orchards but in one case in a newly planted tract. The false chinch bug's attacks, however, seem to be concentrated on a few scattered individual trees, which have been killed by their feeding. Fortunately the period of their occurrence in damaging numbers seems limited to three or four weeks and they are already on the decline. This is not the first occurrence of this pest on citrus, as about six years ago a similar occurrence in their appearance was noted with some damage at this time.

GUAVA

CARDIN'S WHITEFLY (Aleurodicus (Metaleurodicus) cardini Back)

rida

E. W. Berger (August 24): Cardin's whitefly is moderately abundant at West Palm Beach. Specimens have been received from a correspondent.

Note: J. A. H. This species was described from Cuba on guava and was later (February 5, 1921) found on this fruit in the U. S. D. A. Plant Introduction Gardens at Miami, Fla. by W.B. Wood

TRUCK - CROP INSECTS

BLISTER BEETLES (Meloidae)

- Indiana J. J. Davis (July 30): Blister beetles continue to be reported frequently. Undoubtedly these insects are more abundant this year than for a number of years.
- Minnesota A. G. Ruggles (August 20): Lytta nuttalli Say is very numerous in the northwestern part of the State damaging beans.
- North Dakota J. A. Munro (August 22): Considerable attention has been directed toward the blister beetles. Pembina, Walsh, Ramsey, Cavalier, Stutsman, Nelson, Grand Forks, and Griggs were among the counties troubled, the first four named being apparently the chief victims. The injury was confined mainly to garden stuff and caragana hedges.
- Nebraska M. H. Swenk (July 15 to August 1): Blister beetles continued to be reported as damaging alfalfa, potatoes, and garden truck, in all sections of the State. As previously, Epicauta lemniscata Fab. is the prevailing species in southeastern Nebraska, while species of Macrobasis dominate in western Nebraska. However, E. cinerea Forst. was found damaging kohlrabi and cabbage in a truck patch near Omaha in Douglas County.
- Kansas H. R. Bryson (August 22): Blister beetles were reported injurious at Belvidere, Lenora, Miltonvale, Quinter, Topeka, and Richmond.
- Mississippi F. A. Smith (August 20): The striped blister beetles are very abundant on tomatoes and eggplant in the six northwestern counties of the State.
- Louisiana W. E. Hinds (August 21): Blister beetles are feeding on alfalfa and soybeans at Baton Rouge.

NORTHERN MOLE CRICKET (Gryllotalpa hexadactyla Perty)

- Florida E. W. Berger (August 24): The mole cricket is very abundant at Winter Haven. Injury is severe in a newly set lawn.

FALSE CHINCH BUG (Nysius ericae Schill.)

- South Dakota H. C. Severin (August 20): The false chinch bugs are abundant over much of South Dakota and doing damage especially to garden crops.

bug

H. R. Bryson (August 22): The false chinch/ is present at Manhattan, attacking the tassels of sweet corn. It is reported as attacking bolls of flax in southeastern Kansas. It is present on sorghum heads at Manhattan and similar reports have been sent in from Johnson and Gorham.

# POTATO

## COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

H. L. Bailey (August 24): The Colorado potato beetle is very abundant throughout the State.

N. Y. State Coll. Agr., Weekly News Letter (August): Although well controlled where insecticides were applied these insects were very much more numerous than usual over the greater part of the State this year. (Abstract, J.A.H.)

C. A. Thomas (August 22): The Colorado potato beetle is still abundant and destructive to unsprayed potato and eggplant in the southeastern part of the State.

J. S. Houser (August 22): The Colorado potato beetle is very abundant.

E. L. Chambers and assistants (July): The Colorado potato beetle was reported as very abundant throughout the State, unusual numbers being reported from 14 counties. (Abstract, J.A.H.)

A. G. Rugles and assistants (August): The Colorado potato beetle was probably more prevalent than usual, having been reported as very abundant from 15 counties. (Abstract, J.A.H.)

J.A. Munro (August 22): For the most part the Colorado potato beetle is fairly abundant, as reported in McLean, Burleigh, and La Moure Counties; however, as it is a general pest, it does not claim so much attention as some of the newer pests.

H. C. Severin (August 20): The Colorado potato beetle is becoming more abundant after several years of almost total absence.

L. Haseman (August 25): The Colorado potato beetles are common in central Missouri, doing some damage on tomatoes.

A. G. Stephens (August 21): The Colorado potato beetle is scarce in the southeastern part of the State.

Oreg. Agr. College, Insect Pest Report (July): The Colorado potato beetle is scarce on potato throughout Baker County. It is moderately abundant in the upper valley of Grant County.



POTATO FLEA BEETLE (Epidrix cucumeris Harr.)

- Vermont H. L. Bailey (August 24): The potato flea beetles have been unusually abundant in all parts of the State. The peak of emergence of the new brood of adults appeared to be about the first week in August.
- New York N. Y. State Coll. Agr., Weekly News Letter (August): During late July and the early part of August potato flea beetles did very severe damage in northern, central, and western New York. (Abstract, J.A.H.)
- Minnesota J. P. Jensen (August 7): Garden flea beetles have been numerous on potatoes and later on tomatoes in Meeker County.
- North Dakota J.A. Munro (August 22): The potato flea beetle is fairly common in Cass County, but is not a serious problem.
- Nebraska M. H. Swenk (July 15 to August 1): In Butler County a potato field was found to be severely damaged by the potato flea beetle during the third week in July.
- Mississippi F. P. Amsler (August 19): The potato flea beetle is causing considerable damage to potato around Long Beach.
- Oregon Oreg. Agr. Coll., Insect Pest Report, (July): Flea beetles are serious on potatoes and turnips in Clatsop County. They are moderately abundant on potatoes, tomatoes, beans, etc., in Coos County.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

- Vermont H. L. Bailey (August 24): The potato leafhopper is scarce in general. Very little hopperburn is in evidence.
- New York N. Y. State Coll. Agr., Weekly News Letter (August): Hopperburn became conspicuous during the second week in August in the Elba Muck section of western New York. (Abstract, J.A.H.)
- Ohio T. H. Parks (August 24): The potato leafhopper has been more abundant than last year, but not as numerous as in some past years. It has seriously injured poorly sprayed or unsprayed potato fields.
- Indiana J. J. Davis (August 22): The potato leafhopper is moderately abundant generally.
- Michigan R. Hutson (August 24): The potato leafhopper is moderately abundant.

Wisconsin E. L. Chambers and assistants (July): The potato leafhopper is very abundant throughout the State, reports having been received from 20 counties. (Abstract, J.A.H.)

Minnesota A. G. Ruggles and assistants (August): The potato leafhopper is but normally abundant throughout the greater part of the State. It was, however, reported as very abundant from Freeborn, Martin, Rock, and Winona Counties. (Abstract, J.A.H.)

Iowa H. E. Jaques (August 27): Potato leafhoppers are a rather serious pest in the northern half of the State, also in southwestern Iowa.

Missouri L. Haseman (August 25): The potato leafhopper has attracted less attention in Missouri this year than usual.

#### A LEAF BUG (Engytatus geniculatus Reuter )

California R. E. Campbell (July 22): Calls were received from several growers and shippers that a plant bug was damaging tomatoes in Orange County. An inspection of several fields showed that nymphs and adults were numerous, and growers pointed out feeding spots on the stems. The extent of injury is not known as yet. It has previously been reported as injurious to tomatoes in the Hawaiian Islands.

#### TOMATO WORM (Protoparce sexta Johan.)

Maine H. B. Peirson (August 24): There are tomato hornworm reports from many sections of the State.

#### EGGPLANT

##### EGGPLANT LACEBUG (Gargaphia solani Heid.)

Ohio T. H. Parks (August 24): This insect was found by Mr. C. H. Huff to be seriously injuring eggplant in Lawrence County.

#### BEANS

##### MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Vermont H. L. Bailey (July 11): The Mexican bean beetle is moderately abundant at Brattleboro, the first record in Vermont. (August 24): The Mexican bean beetle is very abundant. Not yet reported outside of Brattleboro and Vernon.

Connecticut W. E. Britton (August 24): The Mexican bean beetle is moderately abundant throughout the State, and is very abundant in New Haven and Fairfield Counties.

- Rhode Island      A. E. Stone (July 29): The Mexican bean beetle is moderately abundant.
- New York      N. Y. State Coll. Agr., Weekly News Letter (August): The Mexican bean beetle was reported as doing considerable damage in Orange, Dutchess, and Chautauqua Counties. (Abstract, J.A.H.)
- Pennsylvania      C. A. Thomas (August 22): The Mexican bean beetle has been common, and in some places very destructive, in the southeastern part of the State since June.
- J. R. Stear (August 24): The Mexican bean beetle is very abundant at Ligonier.
- Delaware      L. A. Stearns (August 24): The Mexican bean beetle is throughout the State. Injury by the second brood has been generally severe.
- West Virginia      L. M. Peairs (July 31): The Mexican bean beetle is generally from scarce to moderately abundant. It is very abundant in southern counties.
- Virginia      H. G. Walker (August 24): The Mexican bean beetle is moderately abundant in the Norfolk area.
- North Carolina      Z. P. Metcalf (August): The Mexican bean beetle is moderately abundant in Raleigh.
- South Carolina      A. Lutken (August 25): The Mexican bean beetle is very abundant in Berkeley County. In other areas in the State it is comparatively scarce.
- Georgia      C. H. Alden (August 22): The Mexican bean beetle is scarce in Cornelia.
- Ohio      J. H. Bigger (August 14): The Mexican bean beetle did considerable damage to garden beans in southeastern Ohio and I find them especially bad on lima beans.
- T. H. Parks (August 24): More inquiries than in former years have come from northern Ohio counties. The Mexican bean beetle has been more abundant there than in any previous year. Plenty of rains and cool weather during the last half of August no doubt have been favorable to a heavy second brood. Heavy damage is expected in September.
- Indiana      J. J. Davis (August 22): The Mexican bean beetle is very abundant in the southern part of the State.
- Kentucky      M. L. Didlake (August 24): The Mexican bean beetle is moderately abundant on late beans at Lexington.



Mississippi C. Lytle and assistants (August): Only reported as very abundant from Monroe County this month. (Abstract, J.A.H.)

oming A. G. Stephens (August 21): The Mexican bean beetle is moderately abundant in the southeastern part of the State.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

regon Oreg. Agr. Coll., Insect Pest Report (July): B. G. Thompson reports the western spotted cucumber beetle to have been unusually severe to canning beans in the central part of the Willamette Valley. The parasite Colatoria diabroticae Shimer is quite scarce as compared to recent years. Last year the parasite killed 11 per cent of the beetles as compared to less than 1 per cent this year.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

necticut N. Turner (August 21): This leafhopper has caused serious damage to Golden Cluster and Burger's Green Pod pole beans. Many nymphs are present on other varieties as well.

A COREID BUG (Alydus eurinus Say)

orgia W. H. Clarke (July 21): This insect was found to be causing serious injury to beans. Injury resulted by the insertion of the beak through the pod and the withdrawing of the juices from the developing seed, rendering them unfit for sale.

A COREID BUG (Alydus pilosulus H. S.)

orgia W. H. Clarke (July 21): This insect was observed feeding on beans in the same manner as reported for A. eurinus, but was not as numerous as A. eurinus. A smaller undetermined species of plant bug was also numerous.

CABBAGE

CABBAGE LOOPER (Antographa brassicae Riley)

nsylvania J. R. Stear (August 24): The cabbage looper is very abundant at Ligonier.

linois C. C. Compton (August 10): The cabbage looper is much more abundant than usual in Cook County. At this writing the percentage of parasitism is very low.

IMPORTED CABBAGE WORM (Pieris rapae L.)

- Pennsylvania J. R. Stear (August 24): The cabbage worm is very abundant at Ligonier.
- Ohio T. H. Parks (August 24): Injury from the imported cabbage worm has been serious generally.
- Indiana J. J. Davis (August 22): The imported cabbage worm is moderately abundant generally.
- Illinois C. C. Compton (August): The imported cabbage worm is very abundant in Cook County. The insect is more abundant and destructive than it has been for ten years. Where growers have not been prompt in applying control measures the fields are a total loss.
- Wisconsin E. L. Chambers and assistants (July): The cabbage worm is reported as very abundant from 25 out of 52 counties reporting. (Abstract, J. A. H.)
- Minnesota A. G. Ruggles and assistants (August): The imported cabbage worm was reported as very abundant in sixteen counties. (Abstract, J. A. H.)
- Iowa H. E. Jaques (August 27): The imported cabbage worm has been particularly destructive this season.
- Nebraska M. H. Svenk (July 15 to August 1): The cabbage worm continued to be unusually abundant and destructive during the second half of July. (August 20): The imported cabbage worm is very abundant.
- Missouri L. Haseman (July 25): This insect is very destructive this month; the native species is also abundant.
- Kansas H. R. Bryson (August 22): The imported cabbage worm is very abundant in the State as indicated by numerous reports.
- Utah G. F. Knowlton (August 13): Cabbage worms are unusually abundant in northern Utah.

CABBAGE APHID (Brevicoryne brassicae L.)

- North Dakota J. A. Munro (August 22): We have had most reports on this pest from the eastern part of the State, including Nelson, Ramsey, Rolette, Cavalier, Barnes, Cass, and Richland Counties.
- Utah G. F. Knowlton (August 18): Cabbage aphids are moderately abundant this summer, wherever cabbage has been examined in the northern part of the State.

HARLEQUIN BUG (*Murgantia histrionica* Hahn)

- Virginia C. R. Willey (August 28): We have received a number of specimens of harlequin cabbage bugs which have appeared lately on greens, cabbage, and nasturtium.
- North Carolina Z. P. Metcalf (August): The harlequin bug is very abundant in the eastern part of the State.
- Kentucky M. L. Didlake (August 24): The harlequin cabbage bug is very abundant at Brandenburg, Meade County.
- Nebraska D. E. Whelan (August 22): On August 21 several adults were found feeding on the leaves of kale and rutabaga at the Agricultural College. Mating individuals, eggs, and first-instar nymphs were found on this date.
- Mississippi State Plant Board, Press Release (August 3): The harlequin bug was more or less abundant on cabbage, collards, and mustard over most of the State.
- Louisiana W. E. Hinds (August 22): The harlequin bug is scarce at Baton Rouge, attacking turnips.

CUCUMBERS

PICKLE WORM (*Diaphania nitidalis* Stoll )

- Mississippi State Plant Board, Press Release (August 3): The pickle worm has attacked cucumbers, cantaloupes, and squash generally.
- Louisiana W. E. Hinds (August 21): The pickle worm near Baton Rouge is destroying all the late cucumbers - I do not know to what extent in other sections.

STRIPED CUCUMBER BEETLE (*Diabrotica vittata* Fab.)

- Ohio T. H. Parks (August 24): The striped cucumber beetle has been very abundant in northern Ohio this year. It has not been well controlled by the usual insecticides, and bacterial wilt disease has affected the cucumber and melon plants. Injury is not so serious in central and southern counties.
- Wisconsin E. L. Chambers and assistants (July): The striped cucumber beetle is very numerous and destructive over the southeastern half of the State. (Abstract, J.A.E.)
- Minnesota A. G. Rugles and assistants (August): The striped cucumber beetle was not unusually common throughout the State as a whole but five counties reporting it as abundant. (Abstract, J.A.E.)



Nebraska

M. H. Swenk (July 15 to August 1): More than the usual number of reports of damage to cucumber and melon plants by the striped cucumber beetle continued to be received during the second half of July.

Kansas

H. R. Bryson (August 22): The striped cucumber beetle is very abundant. It is very injurious where cucumber, squash, and melons are grown.

Mississippi

State Plant Board, Press Release (August 3): The southern corn root worm, or budworm, has injured young corn in two places. The adult of this insect, together with the striped cucumber beetle, has done considerable damage to cucumbers, squash, cantaloupes, and late vegetables.

### MELONS

#### MELON APHID (Aphis gossypii Glov.)

South Dakota

H. C. Severin (August 20): The cucumber louse is exceedingly abundant in the eastern part of the State at present.

Nebraska

M. H. Swenk (July 15 to August 1): Beginning about July 20, about the normal number of complaints of injury to melon and cucumber vines by the melon aphid were received. Up to this time the complaints of injury by this pest had been somewhat less than the normal number.

Missouri

L. Haseman (August 25): Melons and cucumbers are badly damaged by the melon aphid. This insect is more abundant than in years and very destructive over the entire State. The pavement ant is herding them.

Kansas

H. R. Bryson (August 22): Severe infestations of plant lice or aphids on cucumber and melons have been reported from several counties in the State.

Louisiana

W. E. Hinds (August 22): The spotted cucumber beetle is scarce at Baton Rouge, attacking watermelons.

### SQUASH

#### SQUASH BUG (Anasa tristis DeG.)

Delaware

L. A. Stearns (August 6): The squash bug is unusually abundant throughout the State and many reports are being received of serious injury.

Pennsylvania

J. R. Stear (August 24): Squash bugs are very abundant at Ligonier.

York

C. R. Crosby (July 27): Specimens received which were attacking squash and cucumbers.

Indiana

J. J. Davis (July 30): Squash bugs were reported abundant on pumpkin at South Bend, July 25. The specimens received were probably not over one-fourth grown. (August 21): Squash bugs were reported destructive to squash at Hammond on August 4.

Illinois

C. C. Compton (August 10): The squash bug is severely injuring squash and pumpkin in Cook County. Some fields are approaching a total loss.

Missouri

L. Haseman (August 25): Squash bugs are unusually abundant and almost impossible to control.

Nebraska

H. R. Bryson (August 20): Squash bugs are very abundant in several localities, including Manhattan, Stockton, and McCouth.

Nebraska

M. H. Swenk (July 15 to August 1): The squash bug was very frequently complained of as doing serious injury to squash from all parts of the State.

Utah

G. F. Knowlton (August 18): Squash bugs continue damaging in many parts of Utah. Squash has been practically eliminated as a crop in many Utah localities, owing to the damage caused by this pest.

#### SQUASH BORER (Melittia satyriniformis Hbr.)

Connecticut

R. E. Friend (August 22): The squash vine borer is more abundant than usual this year.

Indiana

J. J. Davis (August 21): The squash vine borer was reported from East Chicago, August 3.

Illinois

C. C. Compton (August 10): The squash vine borer is very destructive to Hubbard squash. Losses from this insect will run from 10 to 85 per cent of the plants in the Cook County trucking area.

Nebraska

M. H. Swenk (July 15 to August 1): There were numerous reports of serious injury to squash from all parts of the State.

#### ONIONS

##### ONION THRIPS (Thrips tabaci L.)

Illinois

C. C. Compton (August 10): The onion thrips has caused more damage to onions in Cook County than at any time since 1921. Present indications are that the crop will be cut at least 50 per cent. Where early onions have been harvested the thrips have moved over to other crops causing severe injury to cabbage and beans.

Utah

G. F. Knowlton (August 18): The onion thrips is causing its usual injury, wherever onions are grown extensively.

### BEETTS

#### BEET WEBWORM (Loxostege sticticalis L.)

North Dakota

H. W. Riddle (August 25): The sugar-beet webworm has been reported from several localities, the latest report arriving this morning from Adams County. The larvae have been feeding generally on Russian thistle, but they have been found on several cultivated crops. They have attracted considerable attention because of their habit of moving across the road in armies.

South Dakota

H. C. Severin (August 30): The beet webworm has reached outbreak numbers in eastern and western South Dakota during the present month.

Montana

R. W. Gjullin (July): There has been an unusually heavy flight of L. sticticalis.

Utah

G. F. Knowlton (August 18): The sugar-beet webworms are moderately abundant on beets in many localities, but are causing no particular injury at the present time.

#### BEET LEAFHOPPER (Eutettix tenellus Bak.)

Oregon

Oreg. Agr. Coll., Insect Pest Report (July): The beet leafhopper is very abundant in the north end of Morrow County, and moderately abundant in Yamhill and Malheur Counties.

### PEPPER

#### PEPPER WEEVIL (Anthonomus eugenii Cano)

California

J. C. Elmore (July 31): An early warm spring in Orange, San Diego, Los Angeles, and Ventura Counties permitted the pepper weevil to start breeding about February 14 in wild host plants, and the late rainfall up to June 1 was favorable to wild host plant development. The pepper weevil was thus able to pass through two generations before fields were large enough to become infested. Adult weevils have not only been able to enter the pepper fields in large numbers, but high summer temperatures have accelerated development. Many fields are from 25 to 40 per cent damaged at this date.



STRAWBERRY

STRAWBERRY CROWN BORER (Tylocodermia fragariae Riley)

Indiana J. J. Davis (August 21): The strawberry crown borer is damaging strawberry plants at Aurora, August 11. This same pest was also reported from New Albany, July 3, but not previously reported in our notes.

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Maine H. B. Peirson (August 24): The strawberry crown girdler (Brachyrhinus ovatus) invaded homes and one hotel in various sections of Maine.

Massachusetts A. I. Bourne (August 21): Many inquiries have been received relative to the adult beetles of the strawberry crown girdler invading households. These have come particularly from the section of the Cape, but in addition to the inquiries from that region we have had others from up-State. This is apparently a peculiarity in the habits of this insect in its endeavor to find a suitable place for hibernation.

A CURCULIONID (Trichalophus sp.)

Washington W. W. Baker (August 4): Damage has occurred for at least the last three years at Whibley Island, all the small roots being eaten off and the crowns burrowed but the plants do not die till the crop has been produced for that season. There is some evidence that two years are required for the life cycle. We believe the species to be T. didymus Lec. (August 18): This species was found for the first time at Tacoma. Heretofore it was only known from Whibley Island.

WHITE GRUBS (Phyllophaga spp.)

Kansas H. R. Bryson (August 22): White grubs are moderately abundant. Reported causing injury to strawberry beds at Ogallah and Arkansas City.

STRAWBERRY CROWN MOTH (Sanninoidea rutilans Hy. Edw.)

Oregon Oreg. Agr. Coll., Insect Pest Report (July): The strawberry crown moth is moderately abundant in Coos and Yamhill Counties.

PEANUT

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Virginia

F. W. Poos (August 19): Extremely abundant at Emporia and Suffolk, considering recent heavy rains. Causing much yellowing, curling, and dwarfing of foliage--diseaselike injury. This insect is attacking peanut. Same conditions found at Thfield, Weldon, Rocky Mount, and Williamston, N. C.

North Carolina

Z. P. Metcalf (August): Empoasca fabae is very abundant in soybeans and peanuts.

COTTON

BEAN THRIPS (Heliothrips fasciatus Perg.)

California

S. Lockwood (July 27): On the 15th of July there was discovered an incipient infestation of the bean thrips on about 20,000 acres of cotton in the Dos Palos -- Los Banos area of the San Joaquin Valley in California. At that time adult thrips averaged over this area about one thrips to the plant and at this time the larvae were found numerous only in rather small areas of this region. No commercial damage had occurred, though there is promise of considerable to come.

TOBACCO

TOBACCO HORNWORMS (Protoparce spp.)

Vermont

H. L. Bailey (August 24): Tobacco hornworms are moderately abundant in the tobacco fields of the southeastern part of the State.

Wisconsin

E. L. Chambers (August 24): Tobacco fields throughout southeastern Wisconsin were seriously injured by tobacco worms during the past month. This is the most serious outbreak of this pest for many years.

Mississippi

J. Milton (August 22): On July 27 the tobacco worm was doing heavy damage to a small patch of tobacco at Belmont.

POTATO TUBER WORM (Phthorimaea operculella Zell.)

Wisconsin

E. L. Chambers (August 24): Many fields of tobacco show injury from the splitworm (Phthorimaea operculella) in Wisconsin for the first time in many years, and some seriously damaged fields have been observed in Dane, Rock, and Jefferson Counties.

TOBACCO FLEA BEETLE (Epidrix naryula Fab.)

North Carolina      Z. P. Metcalf (August): Tobacco flea beetles are very abundant all over the whole State.

Florida              F. S. Chamberlin (July 31): The tobacco flea beetle has been rather more abundant than usual this season. A considerable number of Epidrix cucumeris have also been observed in tobacco fields.

Kentucky            M. L. Didlake (August 24): Flea beetles are very abundant on tobacco at Lexington.

SUCKFLY (Dicophus minimus Usher)

Florida              F. S. Chamberlin (July 29): Several infestations have been observed in late tobacco crops. It appears that the damage will be slight.

SUGARCANE

SUGARCANE BEETLE (Mettheola ruficeps Lec.)

Louisiana           W. E. Hinds (August 21): Mettheola ruficeps adults are very active feeding on sugarcane, killing many of the young shoots. There has been considerable damage to shoots at Franklin.

SUGARCANE MEALYBUG (Pseudococcus boninsia Kuwana)

Louisiana           W. E. Hinds (August 21): Sugarcane mealybugs are present at Franklin; a few were noticed in a field but not very abundant.



FOREST AND SHADE-TREE INSECTS

PERIODICAL CICADA (Tibicina septendecim L.)

Virginia

C. R. Willey (August 28): As observed on a trip from Staunton to Clifton Forge on July 14, damage by this brood was heavy from Staunton to about 15 miles west. Through the mountains it seemed to peter out until within about 5 miles of Clifton Forge, where it was very heavy.

Ohio

E. W. Mendenhall (August 14): The seventeen-year locust did considerable damage to young orchards and nursery stock in southeastern Ohio, including Muskingum, Morgan, and Washington Counties.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

New York

R. D. Glasgow (August 26): The bagworm is unusually abundant this season at several places on Long Island. Near Jamaica numerous black locust trees along the roadside were almost defoliated by these insects.

Pennsylvania

J. N. Knull (August 11): The bagworm is exceedingly abundant on black locust in Cumberland County.

Delaware

L. A. Stearns (August 6): The bagworm has been infesting many of the common host plants throughout the State. It is unusually abundant.

Virginia

H. G. Walker (August 24): These insects are nearly full grown now and have caused considerable damage to many evergreen trees in the Norfolk area.

North Carolina

Z. P. Metcalf (August): Bagworms in Raleigh are the worst I have ever seen.

Florida

W. L. Thompson (August 12): The infestation of the bagworm is local; only one grove has been observed where these worms are doing commercial damage. At the present time about 25 per cent of the twigs have succulent growth and approximately 90 per cent of that growth has been attacked in Lakeland. The majority of the larvae are about mature at the present time; the bags are on the main mature leaves and twigs.

Ohio

T. H. Parks (August 24): Many complaints have come in concerning bagworm injury to arborvitae and other evergreen plantings, also to some shade trees. The worms are now full grown and feeding is about over. There are many more present than usual.

Indiana

J. J. Davis (July 30): Bagworms one-third grown were sent in as abundant on evergreens at Richmond, July 25; also reported abundant on evergreens at Shelbyville, July 28.

Kentucky

M. L. Didlake (August 24): Bagworms are very abundant on tamarix, cedar, and arborvitae in Fayette, Breathitt, Union, and Pike Counties.

Kansas

H. R. Bryson (August 22): Reports of bagworms present at Salina and Iola.

Mississippi

C. Lyle (August 25): We have received many complaints recently regarding the common bagworm, Thyridopteryx ephemeraeformis Haw., on shade trees, cedars, arborvitae, and other ornamental plants. Heavy infestations were reported at Mendenhall, Clarksdale, Coffeeville, Macon, Starkville, Tunica, and Columbus.

SADDLED PROMINENT (Heterocampa guttivitta Walk.)

New England

J. V. Schaffner, Jr. (August 24): The outbreak of this insect reached its peak in 1930. Larvae were received in 1931 from widely scattered localities in New England and New York, though in some of these places they were not abundant enough to cause noticeable feeding. The Berkshire section of Massachusetts had the worst infestation with about 600 acres of beech and maple showing some degree of feeding up to complete stripping. In southern Vermont about 40 acres were reported from 25 up to 75 per cent defoliated. The infestation in the White Mountain section of New Hampshire was very light. One large area of beech in Tamworth showed light feeding with some trees up to 35 per cent defoliated.

Vermont

H. L. Bailey (August 24): The saddled prominent has been less plentiful than last year and little stripping of foliage has been noted.

ORIENTAL MOTH (Cnidocampa flavescens Walk.)

Massachusetts

J. V. Schaffner, Jr. (August 22): Numerous inquiries concerning C. flavescens are being received from many localities in greater Boston. Most of the larvae are now nearly full-grown, and, where they are at all abundant, they attract considerable attention. The heavy infestations are confined, for the most part, to back yards and vacant lots in residential sections. Spraying for this pest has been done by several municipalities.

BROWN-TAIL MOTH (Nygmia phaeorrhoea Don.)

New England

J. V. Schaffner, Jr. (August 20): From the various reports received the indications are that the infestations of the brown-tail moth have decreased somewhat in intensity. Dr. Smulyan states that "the degree of infestation in New Hampshire is much lighter than last year, about 50 per cent perhaps; in Maine it is about 10 to 20 per cent lighter, although in the heavily infested territory it is slightly heavier." Mr. Wooldridge reports that most of the damage he has seen was in southern New Hampshire, although isolated cases were noted as far north as Alton, New Hampshire. The apple trees were most commonly attacked, though many other species of trees were also found



infested. Many reports were received in 1931 of heavy infestations, varying from a few trees up to 11-acres in extent.

FALL WEBWORMS (Hyphantria cunea Drury and H. textor Harr.)

Maine

H. B. Peirson (August 24): The fall webworm, Hyphantria cunea Drury, is very abundant throughout the State on elm, willow, apple, etc.

New Hampshire  
and  
Massachusetts

J. V. Schaffner, Jr. (August 29): The fall webworm is unusually abundant in many localities through eastern Massachusetts and southeastern New Hampshire, attacking many shade and roadside trees and trees along fence rows.

Vermont

H. L. Bailey (July 31): The fall webworm is moderately abundant in most sections. Very abundant in Essex County.

Connecticut

M. P. Zappe (August 22): Seems to be more abundant in Fairfield County than it has been for several years and is more abundant in this county than elsewhere in the State.

New York

R. D. Glasgow (August 26): The fall webworm is unusually abundant in eastern and southeastern New York this season. In the neighborhood of Ballston Spa, in Putnam and Westchester Counties, and in many places on Long Island; it is not unusual to see small trees almost entirely enclosed by the webs of this insect.

New Jersey

E. P. Felt (August 21): The fall webworm, H. textor Harr., is extremely abundant in northern New Jersey and southeastern New England.

Pennsylvania

C. A. Thomas (August 22): The fall webworm has become very abundant in southeastern Pennsylvania during late July and early August, and many trees, as wild cherry and walnut, have been entirely defoliated by them. Other trees attacked are cherry, apple, hickories, pear, sycamore, Norway maple, mulberry, oaks, etc. The oldest larvae are now pupating and some of the defoliated walnut trees are producing new leaves.

J. N. Knull (July 26): Fall webworms, H. textor Harr., are very abundant in the following counties; Dauphin, Northumberland, Perry, and Juniata.

Delaware

L. A. Stearns (August 24): Webworms are unusually abundant, especially in northern Delaware.

Mississippi

State Plant Board, Press Release (August 3): The fall webworm is still scarce but is becoming more noticeable in the southern half of the State.



ASH

ASH LEAF POUCH GALL MITE (Eriophyes sp.)

New York

E. P. Felt (August 21): The ash leaf pouch gall mite, Eriophyes sp., was extremely abundant upon ash at Scarsdale.

ASH BORERS (Parandra brunnea Fab.) and  
(Podosesia syringae Harr.)

Ohio

E. W. Mendenhall (August 12): The ash and many of the maple trees are badly affected with borers on the streets of New Concord, Muskingum County.

Indiana

J. J. Davis (August 21): The ash borer, Podosesia syringae Harr., is attacking ash at Madison, August 10.

CECROPIA MOTH (Samia cecropia L.)

North Dakota

J. A. Munro (August 22): This insect has been reported from Richland, McKenzie, Adams, and Nelson Counties. At Reeder one farmer reported that his ash trees were stripped of their leaves and were much injured. Later on some trees died. He claimed that a tree could be completely stripped in one night. In Richland County the damage was to boxelder.

BEECH

BEECH SCALE (Cryptococcus fagi Bar.)

Massachusetts

J. V. Schaffner, Jr. (August 22): C. fagi seems to be firmly established in several localities in metropolitan Boston. In two public parks the infestation is very heavy on American beech. On August 21 both eggs and crawlers were observed. In two infestations, where control work was attempted last spring, the conditions are very much improved. This species is reported as very serious in the Maritime Provinces of Canada.

BEECH LEAF SKELETONIZER (Psilocorsis faginella Chamb.)

Maine

H. B. Peirson (August 24): A heavy infestation of the beech leaf skeletonizer has been observed through central Maine.

BIRCH

BIRCH LEAF MINER (Fenusa pumila Klug)

New England

M. P. Jones (August): The leaf miner is very common on gray birch all over New England.

Maine

H. B. Peirson (August 24): The birch Fenusa is very abundant throughout York County.

Connecticut R. B. Friend (August 22): This insect is present throughout the State in usual abundance.

AN UNDERWING MOTH (Catocala briseis Edwards)

Maine H. B. Peirson (August 24): A light infestation of this insect has been observed at West Bath; adults emerged August 10.

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

Maine H. B. Peirson (August 24): The birch leaf skeletonizer has caused hundreds of thousands of acres of birch in northern Maine to brown from the extremely heavy feeding.

BIRCH SAWFLY (Arge pectoralis Leach)

Maine H. B. Peirson (August 24): The birch sawfly is locally abundant in Rangeley.

BIRCH LEAF-MINING SAWFLY (Phyllotoma nemorata Fall.)

Maine H. B. Peirson (August 24): Heavy infestations were reported through the central part of the State.

SPINY WITCHHAZEL GALL (Hamamelistes spinosus Shimer)

Pennsylvania J. N. Knull (June 23): This insect is very abundant on gray birch throughout Pike County.

BRONZE BIRCH BORER (Agrilus anxius Gory)

New York E. P. Felt (August 27): Bronze birch borers have caused very serious injury to a number of weeping birch in a Chatham cemetery, half of the trees being killed and the others very seriously infested.

CATALPA

CATALPA SPHINX (Ceratomia catalpae Bdv.)

Ohio E. W. Mendenhall (August 25): There is an outbreak of this insect on Catalpa bungei trees, planted along streets in Washington Court House.

Indiana J. J. Davis (August 21): The catalpa caterpillar defoliated catalpa at Monticello August 15.

CATALPA MEALYBUG (Pseudococcus comstocki Kuw.)

Connecticut N. Turner (August): Although street trees received a good spray early in the season, on July 21 there were many egg masses and newly hatched crawlers.

CYPRESS

SPIDER MITE (Paratetranychus ilicis McGregor)

E. W. Mendenhall (July 31): I find that many of the cypress trees are infested with this spider mite which was identified by Dr. H. E. Ewing, of the Bureau of Entomology, Washington, D. C.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

H. B. Peirson (August 24): The elm leaf beetle was very abundant at Gorham, August 11.

J. V. Schaffner, Jr. (August 20): We have reports from 25 towns in Massachusetts, 11 towns in New Hampshire, and one in the eastern part of New York State, all of which indicate that this pest has been very abundant, though it appears more<sup>or</sup>less locally, partly owing to municipal and private property spraying. The elms in many localities are completely browned.

H. L. Bailey (July 31): The elm leaf beetle is moderately abundant in Brattleboro, Windham County.

M. P. Jones (August): The elm leaf beetle is abundant in Wareham, Berkeley, Bridgewater, and Blackstone (around Boston).

W. E. Britton (August 24): This insect has been very abundant in the southern counties of the State and also in Hartford and southern Tolland Counties. Many unsprayed trees are brown. In Litchfield, Windham, and the northern portion of Tolland Counties, the elm leaf beetle is less abundant and has caused little injury.

R. D. Glasgow (August 26): In the Hudson River Valley from Albany south, and on Long Island, injury to elm trees by the second brood of the elm leaf beetle has been unusually severe this year. In Hempstead, Westbury, and Garden City, L. I., it is not unusual to see elm trees that are apparently without a single square millimeter of green leaf tissue.

C. R. Willey (August 28): The elm leaf beetle has been bad in Richmond this summer.

E. W. Mendenhall (August 5): The elm leaf beetle has spread for a radius of about 50 miles from Dayton, where it was originally found about 30 years ago. London and Piqua seem to be most severely infested. It is held pretty well in check in Dayton. (August 22): An outbreak of the elm leaf beetle was found in Springfield. It is the first in Clark County.

Oregon Agr. Coll., Insect Pest Report (July): The elm leaf beetle is very abundant at Lexington and Cecil, Morrow County.



California E. O. Essig (August 20): The elm leaf beetle has been reported from the Yosemite National Park, June 10 for the first time.

ELM SPANWORM (Ennomos subsignarius Hbn.)

Pennsylvania J. N. Knull (July 3): There was evidence of a moderately heavy 1931 infestation of the elm spanworm in the vicinity of Ricketts. The insect was present in this locality in 1930.

A SAWFLY (Arge calcanea Say)

Massachusetts J. V. Schaffner, Jr. (August 20): This species was received from Monson August 8 with a report that five small elm trees 8 to 10 feet in height were stripped and three large elms 10 to 18 inches in diameter were 75 per cent defoliated.

ELM SCALE (Gossyparia spuria Mod.)

Wyoming C. L. Corkins (August 27): We have found for the first time in this State the elm bark louse, which is very generally distributed on the elms and doing much damage at Casper.

ELM SCURFY SCALE (Chionaspis americana Johns.)

Ohio E. W. Mendenhall (August 4): The street trees are badly infested with the elm scurfy scale in some parts of Columbus.

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

Maine E. B. Peirson (August 24): Elm trees in Fort Kent are very heavily infested.

JUNIPER

JUNIPER SCALE (Diaspis carueli Targ.)

New York and Pennsylvania E. P. Felt (August 21): The juniper scale has infested junipers seriously in the Philadelphia area and also to a less extent in Pelham, N. Y.

JUNIPER WEBWORM (Dichomeris marginellus Fab.)

New York and Pennsylvania E. P. Felt (August 21): The juniper webworm was reported as infesting junipers in the Philadelphia area, and in Islip, L. I.

LARCH

WOOLLY LARCH APHID (Adelges strobilobius Kalt.)

Maine H. B. Peirson (August 24): There is quite a heavy outbreak of the woolly larch aphid in Medonak.

nsylvania

J. N. Knull (July 29): There is a moderately heavy infestation of the woolly larch aphid in plantations 1 mile south of Ansaria, Toga County.

EUROPEAN LARCH SAWFLY (Lygaeonematus erichsoni Htg.)

nsylvania

J. N. Knull (July 31): The European larch sawfly is doing considerable damage to European larches in plantations in Mainesburg, Asaph, Ansonia, <sup>and</sup> Alta, ~~Twp.~~, Bradford County.

nesota

A. G. Ruggles and assistants (August): The larch sawfly is very abundant. Considerable damage has been done on tamarack. It is reported as scarce in Itasca Park.

LINDEN

LINDEN WART GALL (Coccidortia verrucicola O.S.)

nsylvania

E. P. Felt (August 21): The linden leaf gall was found in great numbers on trees at Valley Forge.

LOCUST

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

ssachusetts

J. V. Schaffner, Jr. (August 21): On August 11, Mr. C. W. Collins observed about an acre of black locust at Berkeley 25 per cent defoliated by this species.

w York

E. P. Felt (August 21): The locust leaf miner is reported abundant at Farmingdale, L. I.

MAPLE

BARK LICE (Psocidae)

w Hampshire

J. V. Schaffner, Jr. (August 24): During August reports were received from three different localities in New Hampshire of the unusual abundance of bark lice, especially on sugar maple. I observed thousands of these insects on four large sugar maple trees at Moultonboro, August 3.

MAPLE TRUMPET SKELETONIZER (Thiodia signatana Clem.)

ine

H. B. Peirson (August 24) The maple trumpet skeletonizer is locally abundant at Richmond.

WOOLLY MAPLE LEAF SCALE (Phenacoccus acericola King)

nnecticut

W. E. Britton (August 24): Apparently this insect is more abundant this summer in Connecticut than for several years.

Pennsylvania J. R. Stear (August 24): The maple Phenacoccus is very abundant. Tree trunks of susceptible maple are almost white with this insect in Ligonier.

Ohio E. W. Mendenhall (August 15): The sugar maple trees on some of the private property in Springfield are very abundantly infested with the maple Phenacoccus.

Indiana J. J. Davis (August 21): The maple Phenacoccus was conspicuous common on maple at Angola, Pleasant Lake, and Howe, July 30 to August 6.

MAPLE COTTONY SCALE (Pulvinaria vitis L.)

Ohio E. W. Mendenhall (August 21): The cottony maple scale is very bad on soft maple trees in Springfield.

Wisconsin E. L. Chambers and assistants (July): The cottony maple scale is moderately abundant in Columbia County, and very abundant in Green Lake County.

North Dakota J. A. Munro (August 22): Specimens of the cottony maple scale were brought in from Williston, Williams County, and Fargo, Cass County. In both cases it was found on boxelder only.

MAPLE CASE-BEARER (Paraclemensia acerifoliella Fitch)

Maine H. B. Peirson (August 24): There is a heavy infestation of this insect on Big Duck Island and light infestations on Mt. Desert Island.

SUGAR-MAPLE BORER (Glycobius speciosus Say)

Ohio E. W. Mendenhall (August 7): The sugar maple borer is doing considerable damage to the maple trees in Granville. There are many large maple trees here affording much shade and adding much beauty to this little college city.

OAK

CARPENTER WORM (Prionoxystus robiniae Peck)

Massachusetts E. P. Felt (August 21): The carpenter worm, and a coleopterous borer, probably Goes, has been seriously injurious to a large oak at Brookline.

OAK SPANWORM (Ellopia somnaria Hulst)

Oregon Oregon Agr. Coll., Insect Pest Report (July): W. J. Chamberlin reports that the larvae are again quite numerous. Oaks in the upper Willamette Valley are beginning to turn brown.



OAK UGLY-NEST TORTRICID (Cacoecia fervidana Clem.)

Massachusetts H. B. Peirson (August 24): There was a heavy outbreak on about 30 acres of scrub oak in Fryeburg, August 1.

RED SPIDERS (Acarina)

Massachusetts M. F. Jones (August): Red spiders were very abundant on oak around Boston, Blackstone, Wareham, Onset, and Berkeley.

New England E. P. Felt (August 21): The work of various species of red spiders on oak, in particular, and less generally upon hickory, is showing up in southwestern New England, in spite of the numerous rains.

PIKE

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Massachusetts H. B. Peirson (August 24): The white pine weevil has been observed in unusually heavy outbreaks throughout the State.

Pennsylvania J. N. Knull (August 8): A recent survey in various sections of Pennsylvania shows that the white pine weevil is very scarce in localities affected by the 1930 drought. The 1931 weevil is far below normal in these areas. In other sections such as the Allegheny Plateau, where the 1930 drought was not so severe, the 1931 weeviling is normal or slightly above the average.

Minnesota A. G. Ruggles and assistants (August): White pine weevils are moderately abundant in Itasca Park. There is slight damage on white pines.

A WEEVIL (Pissodes approximatus Dietz)

Massachusetts H. B. Peirson (August 24): Quite a heavy outbreak on red pine transplants was observed near Bethel.

PALES WEEVIL (Hylobius pales Boh.)

New York E. P. Felt (August 21): The Pales weevil was found injuring a small planting of Scotch pine at Mount Kisco, the grubs girdling the tree just below the surface of the ground and producing the characteristic pitch exudations.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Connecticut M. P. Zappe (August 22): Young larvae are present in buds of red pine at this time. Red pines in many plantations show considerable injury. This pest is becoming a menace to the growing of red and Scotch pines in southwestern Connecticut.

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

Pennsylvania

J. N. Knull (August): Leconte's sawfly was present at the following places: Pitch pine, Weston, Bradford County; one pitch pine, larvae, July 31. Pitch pine, Delmas Top, Tioga County; many trees, larvae, July 29. Pitch pine, red pine, Scotch pine, Ansonia, Tioga County, July 27. Doing considerable damage in plantation at Ansonia. (August 6): A heavy infestation of Leconte's sawfly on pitch pines in a plantation at Prairy Lich, Potter County. (Information received by Prof. Perry)

A SAWFLY (Neodiprion excitans Rohw.)

Mississippi

C. Lyle (August 25): Specimens of Neodiprion excitans were received from Aberdeen, Miss., on August 8, with the report that these insects were stripping the leaves from pine trees.

PINE BARK APHID (Chermes pinicorticis Fitch)

Ohio

E. W. Mendenhall (August 6): I find quite a severe outbreak of the pine bark aphid on a planting of pine trees on a private property on the north side of Newark, Licking County.

Minnesota

A. G. Ruggles and assistants (August): Pine bark aphids are moderately abundant in Itasca Park. Slight damage on white pine.

PINE NEEDLE APHID (Chermes pinifoliae Fitch)

Maine

E. P. Felt (August 21): The pine needle aphid has been very abundant at Portland, the dead aphids occurring in numbers upon the needles.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Maine

H. B. Peirson (August 24): The pine leaf scale is locally abundant in Sidney.

POPLAR

POPLAR SAWFLY (Trichiocampus viminalis Fall.)

Massachusetts

J. V. Schaffner, Jr. (August 10): Mr. H. E. Woods, Local Superintendent of Moth Work, sent in this species and reported that it had stripped some large Carolina poplar shade trees in Chester.

SYCAMORE

WESTERN SYCAMORE LACEBUG (Corythucha confraterna Gibson)

California E. A. McGregor (August): The western sycamore lacebug, C. confraterna, appears to be the worst pest of Platanus racemosa in central California. Annually it increases in severity as the summer progresses until the pest imparts to the beautiful plane trees a conspicuous rustiness that is recognizable almost as far as the trees can be seen. The present season the attack of this insect was at its height about mid-August.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Connecticut E. P. Felt (August 21): Walnut caterpillars are unusually abundant in the Danbury area, defoliating many trees.

Delaware L. A. Stearns (August 4): The walnut caterpillar was reported doing damage to English and black walnut from a number of plantations.

Ohio E. W. Mendenhall (August 21): Walnut caterpillars are bad on walnut trees in some places in southwestern Ohio. Not much is done to check them.

Indiana J. J. Davis (July 30): This insect was reported defoliating walnuts at DeMotte.

Nebraska M. H. Swenk (July 15 to August 1): The walnut caterpillar has been especially numerous and injurious to the foliage of walnut trees during the period here covered.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Massachusetts J. V. Schaffner, Jr. (August 3): Mr. Holbrook reported that 100 roadside willows in Warren, Worcester County, were 50 to 75 per cent defoliated. Also about 50 willows in Sandwich, Barnstable County, 25 to 50 per cent defoliated.

Connecticut M. P. Zappe (August 22): This insect appears to be less abundant than usual in the western part of the State where it was first introduced. In the eastern part of the State it is present in greater numbers.



INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

TARNISHED PLANT BUG (Lygus pratensis L.)

- Maine M. P. Jones (August): The tarnished plant bug is quite a pest in Maine.
- Vermont H. L. Bailey (July 31): The tarnished plant bug is unusually abundant on potato plants. An appreciable amount of damage has been caused by these bugs in sucking the juice from leaf petioles and new shoots.
- New Hampshire M. P. Jones (August): The tarnished plant bug is quite a pest in New Hampshire.
- Massachusetts A. I. Bourne (August 21): The tarnished plant bug this season seems unusually abundant and has been attacking many different species of ornamentals rather severely. We have noted considerable numbers of this insect on gladiolus, and in some cases serious injury to the opening blossoms has taken place.
- New York N. Y. State Coll. Agr., Weekly News Letter (August): Severe injury by the tarnished plant bug, particularly to potatoes, is reported from northern and western New York. (Abstract, J.A.H.)

CALIFORNIA TORTOISE SHELL (Aglais californica Bdv.)

- California E. A. McGregor (July 25): While motoring July 25 through the Siskiyou Mountains of northern California the writer passed through a very dense migration of butterflies. The butterflies were first encountered not far north of Weed, and we passed out of the migration not far south of Dunsmuir, the zone of flight being about 35 miles wide. The butterflies were traveling in a general westerly direction. Possibly 90 per cent of the individuals were not over 3 feet above the ground; very few were as high as the windshield of the car; an occasional individual flew as high as 10 feet. Roughly there appeared to be about one individual to each 100 feet of land surface. Upon inquiry the writer was told that July 25 was the fourth day of the migration.

MEALY FLATA (Ormenis pruinosa Say)

- Massachusetts A. P. Morse (August 3): This lantern-fly has been in evidence locally at Wellesley recently, showing quite an outbreak, but not apparently destructive, on a park planting of various shrubs including especially Indian currant (Symphoricarpos), privet (Ligustrum), Rosa rugosa, etc. The white, flocculent, unsightly patches of downy young on the younger wood of last year, deface the shrubs directly and by shedding on the leaves beneath. The adults have been noticeable for a week or more, perched head downward on infested branches, especially toward the tips, apparently

still feeding. Some years ago an outbreak occurred here in Salem, chiefly in Aralia pentaphylla, the adults becoming a nuisance by flying to lights in nearby houses at night.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

C. L. Corkins (August 27): We have found for the first time in this State the oyster-shell scale at Casper.

ASTER

BLACK BLISTER BEETLE (Meloidae)

A. I. Bourne (August 21): The black aster beetles began to make their appearance about August 5 and are about normally abundant.

ASTER ROOT APHID (Prociphilus erigeronensis Thos.)

J. J. Davis (August 21): The aster root aphid was attacking aster at Elwood, July 30.

STALK BORER (Papaipema nitela Guen.)

J. J. Davis (August 21): This insect was reported on aster at Elwood, July 30, and on potato at Knox, August 1.

A LACE BUG (Corythucha marmorata Uhl.)

C. C. Compton (July 25): A lace bug was observed to be severely injuring asters in a field at West Chicago.

BOXWOOD

EUONYMUS SCALE (Chionaspis euonymi Comst.)

J. E. McEvilly (August 18): The euonymus scale has been very abundant on boxwood plantings in Pike, Walthall, and Amite Counties. Summer-strength oil emulsion has failed to control this pest.

CANNA

LARGE CANNA LEAF ROLLER (Calpodex ethlius Cram.)

H. Dietrich (August 19): The first larva of this insect was found on canna at Lucedale on August 8.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluokalani Kirk.)

Mississippi

H. Dietrich (August 19): This pest has become very abundant on crepe myrtle at Leakesville and Lucedale, the foliage becoming black and sooty from the fungus growing in the honey-comb.

J. P. Kislanko (August 21): The crepe myrtle aphid is quite numerous on crepe myrtle in the vicinities of Wiggins and Hattiesburg.

WHITEFLIES (Aleyrodes)

Georgia

O. I. Snapp (August 14): Whiteflies were not as abundant as usual during the summer months. Crepe myrtle is a favorite host and this plant frequently fails to bloom when whiteflies are abundant. This summer crepe myrtle is blooming abundantly in all locations, which I believe is due to the absence of damage caused by the feeding of these insects.

DAHLIA

A LEAFBEETLE (Nodonota clypealis Horn)

Mississippi

C. Lyle (August 25): On July 23 a correspondent at Corinth, sent to us specimens of Nodonota clypealis with the report that these insects were causing much injury to dahlia blossoms.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Virginia

C. R. Willey (August 28): The euonymus scale seems to be particularly bad over the eastern part of the State this year where euonymus is grown.

FERN

FERN SCALE (Hemichionaspis aspidistrae Sign.)

Mississippi

H. Dietrich (August 19): This scale is becoming very abundant again on ferns at Lucedale.

IVY SCALE (Aspidiotus hederæ Vall.)

Mississippi

H. Dietrich (August 19): The ivy scale is very abundant at Lucedale on asparagus fern used by a local florist for decorative purposes.



GLADIOLI

GLADIOLUS THRIPS (Taeniothrips gladioli M. & S.)

Massachusetts

J. V. Schaffner, Jr. (July 31): In a small garden at Wakefield about 800 to 1,000 gladioli are badly infested by this species. Buds and blooms are ruined. Leaves are badly browned.

A. I. Bourne (August 21): Gladioli throughout the State have been attacked by a species of thrips which apparently is the onion thrips, although I can not be certain of the species; in fact, we have placed these in the hands of specialists for identification. As soon as we are sure of the species, I shall forward the information to you. The attack on gladiolus by these thrips has been rather serious throughout July and thus far in August. Many commercial plantings have been injured by this combination of thrips and tarnished bug.

New York

C. R. Crosby and assistants (July 31 and August 8): This thrips was reported from Schenectady and Buffalo.

Pennsylvania

J. R. Stear (August 24): Reported as very injurious in a gladiolus planting and in a greenhouse at Pittsburgh.

Ohio

J. S. Houser (August 22): The gladiolus thrips is very destructive in northern Ohio. Several large growers were unable to exhibit at the National Gladiolus Show held in Cleveland, August 14, 15, and 16.

IRIS

IRIS BORER (Macronoctua onusta Grote)

New York

C. R. Crosby and assistants (July 28 and August 7): This borer was reported from Middletown on the earlier date and from Esperance on the latter one.

Indiana

J. J. Davis (August 21): Very serious this year at LaPorte according to a report dated August 8.

LILAC

EUROPEAN HORNET (Vespa crabro L.)

Connecticut

E. P. Felt (August 21): The European hornet has been reported from Red Bank as injuring lilac

CECROPIA MOTH (Samia cecronia L.)

Indiana

J. J. Davis (July 30): Larvae, about three-fourths grown, were reported abundant on lilac at Anderson, July 18.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

MOSQUITO (Culicinae)

- South Carolina D. G. Hall (August 1 to 20): Aedes aegypti L. is the most prevalent mosquito in residences in Charleston.
- Georgia D. G. Hall (August 15): Mosquito (Culex quinquefasciatus Say) was found commonly in one section of Augusta.
- Mississippi C. Lyle and assistants (August): Mosquitoes were very abundant and extremely annoying throughout the State. The salt-marsh mosquito (Aedes sollicitans Walk.) was the prevalent species along the coast.

EYE GNATS (Hippelates sp.)

- Mississippi H. Dietrich (August 19): Eye gnats (Hippelates sp.) have become extremely annoying in George, Greene, and Perry Counties so that one can not remain in the shade without a breeze to carry them away.
- South Carolina D. G. Hall (August 1 to 20): H. pusio Loew is becoming extremely abundant about Charleston and on Folly Island. Cases of conjunctivitis were observed in horses. According to owners of a riding academy it was necessary to move most of the horses from this locality during the eye-gnat season. Cases of conjunctivitis are said to occur in children, but have not been observed by us. (August 15): Eye gnats (H. pusio) were found to be quite annoying at Augusta. According to the city health authorities cases of conjunctivitis commonly occur in children during the fall months.
- Florida W. E. Dove (August 10): A correspondent reports annoyance of eye gnats (H. pusio Loew) at Marianna. From others we learn that on account of conjunctivitis it was necessary to close a school in this city last autumn.
- California J. L. Webb (August 26): Hippelates pusio Loew is relatively abundant after the usual summer decrease. Rains and cool weather around the first part of the month hastened the return of the pest. The normal fall increase (not yet fully attained) occurs about the middle of September. (R. W. Burgess.)

FLEAS (Stenoccephalus sp.)

- Massachusetts J. V. Schaffner, Jr. (August 20): A great many residents of eastern Massachusetts have been troubled with infestations of fleas in their households the past few weeks. In each case I found they possessed either a cat or a dog.
- Kentucky M. L. Didlake (August 24): Fleas are very abundant in houses at Lexington.
- Michigan R. H. Pettit (August 7): The cat flea was never so troublesome in Michigan as right now.
- Nebraska M. H. Swenk (July 15 - August 1): Numerous reports of infestations with fleas in houses, barns, chicken houses, and other buildings continued to come from eastern Nebraska during the second half of July.

SAND FLIES (Culicoides sp.)

- South Carolina J. B. Hull (August 1 - 20): Sand flies known to us as Culicoides melleus Coq. are annoying pests of man at a cemetery in the city of Charleston. (August 1 - 20): The tropical sand fly, C. furax Fock, continues to emerge during the summer months. It has not been annoying in residences in the city of Charleston, but is present at Folly Island, a beach resort.
- Georgia D. G. Hall (August 15 and July 21): Sand flies, said to be bloodsuckers of man at night, and known to us provisionally as C. biuttatus Coq., were recovered in traps at Augusta. They were collected in dark culverts of rapidly running streams in the city of Waycross. This species is apparently of economic importance in fresh water areas. Its occurrence is somewhat correlated with that of a so-called "sandfly fever."

CATTLE

SCREW WORM (Cochliomyia macellaria Fab.)

- Texas F. C. Dishorn and associates (August): Many cases of screw worms in cattle, sheep, and goats have been reported from various points in western Texas. Apparently the pest is more abundant than usual for midsummer.

SHORT-NOSED OX LOUSE (Haematopinus eurysternus Hitzsch)

- Nebraska M. H. Swenk (July 15 to August 1): During the third week in July a Lincoln County ranchman reported his cattle to be heavily infested with the short nosed cattle louse (H. eurysternus.)



HORSESHORSE FLIES (Tabanus spp.)

Texas

T. C. Bishopp and associates (August): Horse flies, Tabanus rubescens Bellardi, are causing considerable annoyance to live-stock in the plateau region of western Texas and along the escarpment to the south and southeast. Along a number of streams the flies have been extremely troublesome, and in certain instances from 5 to 10 flies were observed per animal several miles away from the streams. A rather widespread outbreak of anthrax is in progress in the region invaded by the horse flies. Transmission of the disease from sick to healthy animals is attributed by most stockmen to the presence of the flies. Masses of horse fly eggs are present on the rocks in many of the streams, and a considerable percentage of parasitism of the eggs by Prophanurus emersoni Girault was noted in several localities.

Missouri

L. Haseman (August 25): At Columbia horse flies have been unusually abundant in spite of dry weather.

HORSE BOTFLY (Gastrophilus haemorrhoidalis L.)

North Dakota

J. A. Munro and assistants (August): The horse botfly is reported as moderately abundant throughout the State and very abundant in Dickey County. (Abstract, J.A.H.)

POULTRYSAND FLY (Culicoides sp.)

Texas

E. W. Laake (July 28): Sand flies collected in poultry houses near Temple and Little River are reported as serious pests of poultry and young turkeys. The bites resulted in death of young turkeys. The species is identified by Hoffman's description as Culicoides variipennis Hoffm.

H. O. Schroeder (August 13): Specimens of the tropical sand fly, C. furens Foey, were collected in the vicinity of Brownsville.

BEDBUGS (Cimex lectularius L.)

Indiana

J. J. Davis (August 21): Bedbugs were reported from Oaklandon, Muncie, and Fortville, August 4-19. At the latter place they were very abundant in chicken houses.

MISCELLANEOUS ANIMALSBROWN DOG TICK (Rhhipicephalus sanguineus Latr.)

Florida

W. E. Dove (August 11 - 20): Collections of ticks from dogs in Dade County by Mr. H. L. Reed show that Rhipicephalus sanguineus is common during this season of the year.

HOUSEHOLD AND STORED-PRODUCT  
INSECTS

HOUSE CRICKET (Gryllus domesticus L.)

Maine

H. B. Poirson (August 24): There has been a heavy invasion of homes in our section of Augusta by this insect.

Ohio

T. H. Parks (August 24): We were called to see an unusual outbreak of crickets of this species that was present in and around houses near a city dump at the edge of the city of Columbus. The crickets hatched in the dump and migrated to surrounding premises in late July and early August. They were so abundant as to cause much excitement in the neighborhood and property owners were compelled to scatter pyrethrum powder in their living rooms to kill the crickets. They came in so rapidly that pyrethrum had to be used every second day. The city dump was set afire at night by irate residents who could not stand the nuisance. Poisoned bran wash failed to kill the crickets.

BLACK FIELD CRICKET (Gryllus assimilis Fab.)

North Dakota

J. A. Munro (August 22): The black field cricket has been very abundant and is found in large numbers all over the State. Housewives have a big problem in ridding the house of them.

A PSOCID (Psocus venosus Bur.)

New Hampshire

L. C. Glover (July): Many reports of this psocid were received during the past two weeks. This is, apparently, very abundant over a large area of the State this summer.

EUROPEAN BERTIG (Forficula auricularia L.)

New York

C. R. Crosby (August 4): Gardens and orchards are overrun with these insects, at Buffalo.

Oregon

Oregon Agr. Coll., Insect Pest Report (July): Bertigs are more plentiful this year in Clatsop County. The June hatch was very large. They are also very abundant in Douglas County.

STRAWBERRY

ROOT WEEVIL (Brachyrhinus exilis L.)

New York

W. E. Blackwelder (August 6): A house was overrun with these insects, at West Webster.

PHAROAH'S ANT (Monomorium pharaonis L.)

Illinois C. C. Corpton (August): Ants are much more annoying in the household than usual in Cook County. Pharosch's ant, M. pharaonis, and the odorous ant, Tenipoxa possile Say, are the most troublesome species.

North Dakota J. A. Munro (August 22): Barnes, Traill, Nelson, Ward, Clay, Divide, Grand Forks, Burleigh, and Sargent Counties all seem to be bothered with the ant problem. One notices the ants in large numbers along sidewalks, on trees, shrubs, and flowers, around foundations of buildings, and on lawns. The housewife sees them in particular in the pantry.

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi C. Lyle and assistants (August): It has been two years since an Argentine ant control campaign was put on at McComb. The control has been very successful and it is hoped that the city will put on a campaign this fall. There are seven infested towns from the Louisiana line north along the line of the Illinois Central Railroad to the Lincoln County line. These ants are very numerous and annoying to residents in towns and localities where no poisoning campaign was conducted during the past fall.

TERRITES (Reticulitermes Sp.)

Indiana J. J. Davis (August 21): Territe infestations were reported from August 3 to 17 from Elkhart, Hagerstown, Milan, and Indianapolis.

Kentucky M. L. Diddle (August 24): Territes are very abundant in houses at Lexington, Paducah, Frankfort, and Winchester.

Mississippi C. Lyle and assistants (August): Territes have been found in refuse wood under 90 per cent of the homes inspected here in McComb. Lack of ventilation and excessive moisture content of the soil are partially responsible for the presence of territes. (August 18): Territes are moderately abundant in residences at Natchez. (August 22): Territes continue to injure foundations of homes that are bricked around the foundation wall at New Albany, Union County. Territes continue to damage dwelling houses in northeastern Mississippi, and territes were found in a home at Booneville.

HOUSE CENTIPEDE (Scutigera forcops Raf.)

Illinois J. J. Davis (July 30): House centipedes were reported from East Chicago, July 29.

New York C. E. Crosby (August 5): "It is found from cellar to attic and all rooms in between, at Riverdale."



BELLY WEEVIL (Mylabris obtectus Say)

Oregon Oregon Agr. Coll., Insect Pest Report (July): This insect is moderately abundant in Douglas County.

PIL WEEVIL (Mylabris pictorata L.)

New York C. R. Crosby (July 6): Infested beans received. Farmers in the vicinity have trouble with this insect.

Georgia O. I. Shanon (July 25): Weevils have ruined many beans stored for seed at Fort Valley.

Oregon Oregon Agr. Coll., Insect Pest Report (July): F. G. Hinton reports most of the weevils in the pupal stage and adults beginning to emerge, August 6.

PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from "News Letter," August, 1931

(Not for publication)

GIPSY MOTH (Porthetria dispar L.)

During July each year information is gathered as to the amount of defoliation caused by the gipsy moth. Last year there was considerably less reported than the previous year, and early indications are that there will be less reported this season than last year. There is, however, severe defoliation in the area in Massachusetts south of Brockton, which will be reported on later.

A larva of the gipsy moth was intercepted at Seattle on an Azalea plant in furnishings from Japan. In 1930 both larvae and pupae of this insect were found at Honolulu, Hawaii, on maple, pine, and rose from Japan. The gipsy moth is more commonly intercepted in the egg stage.

BROWN-TAIL MOTH (Nyctia phaeorrhoea Don.)

Evidence based on the number of brown-tail webs which were cut in New England during the winter of 1930-31 showed that this insect was more abundant than usual in some sections. This was particularly true in southwestern Maine where the infestation was especially heavy on small groups of apple trees in villages. This also applies to a considerable extent in central and southeastern New Hampshire. In Massachusetts the webs are cut annually rather consistently by the local moth superintendents, and considerable less webs were cut last winter than during the previous winter. In Maine a total of 320,964 webs and 69 bushels of webs were cut in the 9 towns which reported, the greatest number for any one town being 307,000 webs at Biddeford. In New Hampshire a total of 655,076 webs were cut in 50 towns, the greatest number in any one town being 80,757 at Pembroke. In Massachusetts there were 36,564 webs and 312½ bushels cut in the winter of 1930-31 as compared with 75,684 webs and 307 bushels cut the previous winter. In some cases the number of webs cut are reported by bushels. It is practically impossible to arrive at the average number of webs in a bushel for they vary greatly in size and also in the amount of twig that is left on each web. Figures range from 1,500 to 2,800 webs to the bushel, and if we take as an average 2,000 webs to the bushel, it gives us 763,000 webs. Using this figure, with the 1,012,604 webs which were reported cut, gives a grand total of 1,775,604 webs cut and destroyed during the winter of 1930-31 in New England. Webs were cut in several other towns especially in Maine, but no record as to the number is available.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

The field inspection performed in the Salt River Valley of Arizona prior to July 1 has been more or less at random, in an endeavor to locate infested fields. At this time 6 such fields have been found, 3 south of Laveen and 3 in the Goodyear-to-Queen Creek area. Beginning with July, weekly infestation counts are to be made from some 20 fields in the Salt River Valley and several fields in the vicinity of Coolidge and Casa Grande in the Gila Valley. Some of the fields are in stub cotton and others in planted cotton of both short

and long staple varieties. Each of the fields selected is representative of the conditions for that particular class of field. Bolls, or squares when bolls are not available, will be collected and kept on ice until they can be inspected.

Live larvae of the pink boll worm were intercepted in cotton seed as follows: In baggage at Baltimore from Porto Rico, in mail at Boston from Cyprus and in baggage at Boston from St. Kitts. The infested seeds from Cyprus were found in three pounds of raw cotton used as packing for antiques.

Larvae of the pink boll worm were also intercepted at Washington, D. C., in seed cotton, in baggage from Antigua and Nevis, British West Indies. These are our first interception records for the pink boll worm from Antigua and Nevis.

#### MEXICAN FRUIT FLY (Anastrepha ludens Loew)

In Matamoros, on the Mexican side of the river, inspections were continued of fruit growing locally and of imported fruit offered for sale in the markets. In the fruit from the interior of Mexico infestations were found in shipments of apricots, guavas, mangoes, oranges, and plums. Infestations were found in white sapotes, Sargentia greggii, and sour oranges growing in Matamoros. The fruit from these trees has been picked off and destroyed by burial. Of special interest in explaining how infestations are started in Matamoros was the finding of a decayed mango which had been thrown out in the yard of a house in the northwest part of the city. Upon inspection 14 larvae of the fruit fly were found in this mango. Some fly traps were placed in various yards during the month in addition to the 84 which were already out. These traps are baited with an orange syrup solution and inspected twice weekly. Twenty-two adults of the fly were caught in these traps during the month.

#### DATE SCALE (Parlatoria blanchardi Targ.)

During the past seven months only three infested palms have been found by the routine crews that inspect the commercial gardens. On two of these palms only a single scale each was found. During the previous year scale was found each month, and 139 infested palms were found in the 11 months preceding



INSECT CONDITIONS IN PORTO RICO DURING JULY, 1931  
M. D. Leonard  
Insular Experiment Station, Rio Piedras, Porto Rico

Two adults of the coconut rhinoceros beetle, Strategus quadrifoveatus Beauv., were received under date of July 16 from Alberto Correa from Utuado with the statement that they were found eating the shoots of young cane plants; the injury was noted in several places near Utuado. (M.D.L. and F. Sein.)

Adults of Ligyris tumulosus Burn. were abundant at lights during the month at Isabela and many were being eaten by the imported toad, Bufo marinus L. (G.N.W.)

Dyscinetus barbatus Fab. adults were absent at lights during the whole month. (G.N.W.)

The leafhopper Protalebra brasiliensis DeLong, known to attack sugarcane occasionally, continued to be abundant throughout the month on Bidens pilosa on the El Morro Golf Course in San Juan. (M.D.L.)

Mr. Fletcher, Manager of Hill Bros. Co., a large cannery located in Rio Piedras, stated on July 22 that all during the past fiscal year the weevils Diaprepes spengleri L. had done damage by stripping the foliage on a considerable number of young trees in his grove at Manati, necessitating much hand-picking of the weevils by boys. He stated that less trouble was experienced in his Rio Piedras grove. (M.D.L.)

The weevil Lachnopus curvipes Fab. has been locally more abundant around Isabela than the common "vaquita" (Diaprepes abbreviatus L.) which causes the bulk of the injury to the leaves. (G.N.W.)

The orange dog, Papilio androgeus Cramer. On July 12 a butterfly emerged from a caterpillar found on grapefruit foliage at Isabela some time previous. On the same day two other caterpillars were brought in. (G.N.W.)

The papaya fruit-fly, Toxotrypana curvicauda Gerst., was sent in under date of July 8 by T. B. McClelland from the Mayaguez Experiment Station in a rather small and rather green fruit which contained 14 newly formed puparia and one full-grown larva. (M.D.L.)

One fruit was found infested at the substation at Isabela on July 3 and sometime during the month nearly all of the fruit on several plants in a farm near Aguadilla were infested. (G.N.W.)

The introduced ladybird beetle Cryptolaemus montrouzieri Muls. was observed during the month, but not very commonly, at Isabela feeding on a soft scale. (G.N.W.) The scale may possibly be Pulvinaria psidii Mask., since there is a previous record on this host plant and scale for the ladybird in Porto Rico.

The cotton leaf worm, Alabama argillacea Hbn., occurred in destructive numbers in the whole North Coast cotton section during the month, but was most injurious around Isabela and Camuy. (M.D.L.)

The pink boll worm, Pectinophora gossypiella Saund., was generally distributed throughout the whole cotton-growing section of the North Coast, the least injury being at Isabela and the heaviest around Arecibo and Aguadilla (M.D.L.)

Cotton stainers, Dysdercus andreae L., were more or less general in the North Coast cotton section, but doing little injury. (M.D.L.)

Diabrotica graminea Baly was abundant and injurious to corn at Isabela during the month. (G.N.W.)

The alfalfa leaf-tier, Dichomeris piperatus Wlsm., was destructively abundant during the month at Isabela in one patch, rendering the alfalfa worthless for feeding. (G.N.W.)

The velvety cutworm, Prodenia ornithogalli Guen., was abundant at Isabela attacking a wide variety of hosts including alfalfa, crotalaria, and tomato besides numerous weeds. (G.N.W.)

Many specimens of Nezara marginata Beauv. clustered on a single pod of crotalaria at Isabela. (G.N.W.)

Injury to "gramma" grass (St. Augustine grass) by Psara phaeopteralis Guen. was reported in July, the grass on a large lawn being more severely affected in the shade than in the sun. (G.N.W.)

The sugarcane looper, (Mocis) Remigia repanda Fab., defoliated a small area of Para or malojillo grass (Panicum barbinoda), young plant cane, and half-grown elephant grass (Pennisetum glaucum). (G.N.W.)

The velvet-bean caterpillar, Anticarsia gemmatilis Hbn., was abundant on the foliage of alfalfa and sword beans at Isabela during the month. (G.N.W.)

The bean leaf-webber, Nacoleia indicata Fab., moderately infested a good-sized patch of pole limas throughout the month at the Station at Rio Piedra (M.D.L.)

The bean lace-bug, Corythucha gossypii Fab., was also present on the pole limas, but not very injurious although it increased somewhat towards the latter part of the month. (M.D.L.)

The bean leaf-roller, Eudamus proteus L., was present but only moderately injurious in a good-sized patch of pole limas at the station in Rio Piedra (M.D.L.)

The potato blight, Phytophthora infestans fabae Harr. was present in moderate numbers in the same patch of pole lines at the Station in Rio Piedras. (M.D.L.)

Diabrotica innuba Fab. was quite abundant on cantaloupes at Isabela. (G.N.W)

The melon worm, Diaphania hyalinata L., was observed on July 31 to be considerably injuring the leaves and blossom buds of a fair-sized patch of cucumbers at the Station in Rio Piedras. The vines were just beginning to run by the end of the month and no fruit had set as yet. (M.D.L.)

Four moths of Diaphania nitidalis were reared from chayote (Sechium edule.) (F. Sein.)

A mealybug, presumably Pseudococcus citri Risse, was found on July 2 to be moderately infesting several celery plants (one badly infested) at the Station on grounds at Rio Piedras. The bugs were clustered at the base of the stalks just above the ground, and a few were on the roots. We have only one previous record of injury to celery in Porto Rico by this insect, collected by T. H. Jones, July 3, 1912, Rio Piedras, determined by H. Morrison. (M.D.L. and F. Sein.)

Diabrotica graminea Baly was fairly abundant and doing moderate damage in a 1-acre planting of okra in Trujillo Alto on July 10. Most of the plants had finished bearing, however. (A.S. Mills.)

The pink boll worm, Pectinophora gossypiella Saund., was found on July 10 infesting 10 out of 16 pods examined in a 1-acre planting of okra at Trujillo Alto. The okra adjoined a field of about  $1\frac{1}{2}$  acres of cotton which showed about 85 per cent infested bolls. The okra plants examined were situated near the edge of the field next to the cotton. The infested pods were all mature, at least 3 or 4 inches in length, and each contained 1 or 2 larvae, and several pupae were found within the pods. The cotton was an old field which had been infested for some time. (A.S. Mills.)

The canna leaf-roller, Calrodex ethlius Cram., became destructively abundant during the month on a number of plants at Isabela, averaging one or two larvae per plant. (G.N.W.)

The Hawaiian beet webworm, Hymenia fascialis Cram., was abundant on July 12 (when first noticed) and through the rest of the month on several large patches of a weed, Gonolobus dispersa, locally called "arraza contodo." The moths were much in evidence and the larvae were webbing together and skeletonizing the leaves to a considerable extent on the El Morro Golf Course in San Juan. (M.D.L.)



CUBA

Notes on observations during July, 1931

By L. Dean Christenson  
Cuba Sugar Club Experiment Station  
Baragua, Cuba

Cutworms have been observed doing some damage to truck crops in the vicinity of Baragua. Concentrations of these pests were lacking, however, and injury as a whole was slight.

Feeding on the leaves of sugarcane ratoons by the larval stage of Monodeltoides Mosch. (det. by Schaus) was reported from Central Cuba, Matanzas Province.

Cirphis latiuscula H.-Schf. has been reported on sugarcane ratoons at Central Cuba and Socorro. The damage was not severe and the infestations were local in character.

Alabama argillacea Hbn. was collected on cotton at Baragua during the last week of June and the first two weeks of July. The infestation was light. The cotton was 1 to 2 feet high and small bolls had formed.

The velvet bean caterpillar, Anticarsia gemmatilis Hbn., was present on velvet beans at Baragua during the latter part of June and the first two weeks of July. The infestation was not severe although damaging.

An unidentified species of Miridae has been extremely injurious to Crotalaria at Baragua. Crotalaria retusa was most severely attacked, being completely destroyed. The insect was present on other species of this legume in damaging numbers. It confines its feeding almost entirely to the leaves of the plants.

Utetheisa venusta Dalman is present on Crotalaria. The larval stage injures all species by feeding on the leaves and, in addition, by infesting the pods. It is only moderately abundant, being heavily parasitized in the adult stage by Trichogramma and being the host of larval parasites as well.

Etiella zinckenella Treit. is doing considerable damage to the pods of Crotalaria incana. Of several species of Crotalaria growing in adjacent plots, C. incana was the only one attacked.

The citrus blackfly, Alexrocenthus woglumi Ashby, is abundant on citrus trees examined in Caraguey Province. In Cuba this pest is present throughout all seasons of the year.

Arhis maidis Fitch was observed in damaging quantities on field corn in extensive plantings of this crop in the vicinity of Baragua. The lice appear in numbers soon after the emergence of the tassels from the central leaf roll. On small plants they have not been noted.



# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

October 1, 1931.

Number 8

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





## INSECT PEST SURVEY BULLETIN

Vol. 11

October 1, 1931

No. 8

### OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR SEPTEMBER, 1931.

The grasshopper situation had not materially changed during the more part of the month; during the latter part of the month, however, damage dropped off rapidly and egg laying started.

The first specimens of the cotton leaf worm were observed in southern Mississippi on August 31. This is so late that there is little probability of any damage to fruit in the Northern States.

The common red spider continued to be troublesome throughout the month over practically the entire country.

A new and heavy infestation of the Japanese beetle was found at Springfield, Mass. This insect was also reported as having been taken at Charleston, S. C., at several localities in Somerset and Worcester Counties, N. J., at Richmond, Va., and as far west as Pittsburgh and Erie, Pa. It has also been found this summer at Little Falls, Watkins Glen, Fort Edwards, Albany, and Buffalo, N. Y., and at Boston, Mass.

In this number of the Survey Bulletin is a report on the wheat survey which has just been completed in Illinois. The State average of smaller infestation for this year is 9 per cent as compared with 12 per cent in 1930. There is also in this number of the bulletin a detailed report of the wheat joint worm situation in Illinois.

A chinch bug outbreak in Charleston, S. C., caused very extensive damage to St. Augustine grass lawns in that city. Weather during September as a whole was favorable to chinch bug development in the East Central States and rather large numbers of these insects will in all probability go into hibernation this fall.

The green clover worm quite seriously infested soy beans, cowpeas, and clover in the vicinity of Cladbourne, N. C., and in south-central Tennessee.

The alfalfa weevil did more damage than ever before at Casper, Wyo. In some fields the foliage of the first cutting was practically destroyed.

The three-cornered alfalfa hopper did very appreciable damage to alfalfa in fields along the Mississippi River in Bolivar and Washington Counties, Miss., and from Madison County to East Baton Rouge County, La.

The cowpea curculio was causing rather severe damage in parts of North Carolina and Alabama.

Apple leafhoppers increased in numbers and destructiveness very decidedly during the month of September. Reports of damage were received from Rhode Island, southward through the Middle Atlantic States to Georgia and westward to Oklahoma.

The San Jose scale was reported as very abundant from Pennsylvania westward through the East Central States and southward to Mississippi. This insect seems to be on an upward trend in the East Central States.

The Oriental fruit moth was but moderately abundant and did little damage over the New England, Middle Atlantic, South Atlantic, and East Central States. Very late varieties of peaches in northern Ohio were severely damaged, the lemon freestone being about 50 per cent.

What has been tentatively identified as a European species of blister mite (Phyllocoptes fockeni Na. & Tr.) was collected in southwestern Idaho, where it was russetting the leaves of plum. This insect has not heretofore been recorded from this country.

The grape leafhopper developed rapidly during the early part of September and was reported from Iowa, Nebraska, Mississippi, and Utah as injuring grapes and woodbine.

Mole crickets were occasioning considerable trouble in the truck regions of Florida and Alabama. In Nebraska these insects were more troublesome than ever before recorded.

Blister beetles were quite generally destructive over the entire country from North Carolina southwestward to New Mexico. In the East Central and West Central States they were particularly destructive.

The false chinch bug was reported as damaging cabbage, corn, turnips, and alfalfa in Nebraska, Mississippi, New Mexico, and Texas.

During the month the Mexican bean beetle increased in numbers in the drought area of 1930 to such an extent that it is nearly as numerous in that region as it was in 1929.

An extremely heavy infestation of Fuller's rose beetle was observed at Chadbourn, N. C., where it was very seriously damaging beans.

The lima bean vine borer was quite generally infesting lima beans at Chadbourn, N. C.

Harlequin bugs were reported as generally very numerous throughout the South Atlantic States as far north as Washington, D. C., and were also quite troublesome in the southern part of the East Central States.



Both the pickle and melon worms were doing excessive damage to cucurbits in the Charleston area of South Carolina. The pickle worm was reported as damaging these crops in Alabama and Mississippi. These insects were also more prevalent than usual in Maryland.

The tobacco flea beetle was so numerous as to require the use of insecticides in the burley tobacco districts of North Carolina and Tennessee.

The fall webworm was more troublesome in southern New England than it has been in the past 20 years. It was also reported as generally abundant in the Middle Atlantic States southward to Delaware.

The spruce budworm has killed and is killing large areas of white fir in the vicinity of Halfway, near Whitman National Forest, Oregon, and in the Ochoco National Forest.

Eye gnats have been worse this fall than they have been for many years in the South Atlantic and Gulf States from South Carolina to Texas. Associated with these outbreaks are numerous cases of conjunctivitis.

Various species of sand flies belonging to the genus *Culicoides* were quite prevalent from North Carolina to Florida and around the Gulf to Mississippi.

The stable fly was very unusually prevalent in the South Atlantic and Gulf region from Maryland to Florida, Alabama, and Mississippi. The condition was so serious in Wicomico County, Md., that many horses and cattle were forced into the surf and drowned.

During the past two months over 300 cases of damage to buildings by termites were reported to the Bureau of Entomology. The great majority of these cases were in the Southern States, but scattered reports were received as far north as Iowa, Ohio, and Pennsylvania.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN CANADA FOR SEPTEMBER, 1931

Reports of increasing grasshopper abundance and crop damage continue to be received from over a wide territory in the Dominion extending from Quebec to British Columbia. Species concerned are the lesser migratory and two-striped grasshoppers in the West, and the red-legged grasshopper in the East.

Infestations of the wheat stem sawfly, ranging from heavy to light, are reported from sections of south-central Alberta, southern Saskatchewan, and southern Manitoba, damage in wheat fields varying from 1 to 75 per cent crop loss.

Over much of southern Quebec, second-year white grubs have been causing extensive damage, particularly in unploughed sod areas, and considerable injury by these insects is anticipated in 1932. In eastern Ontario, the

majority of the grubs had transformed to the adult stage by early August. The species is Phyllophaga anxia Lec.

In southern sections of the Prairie Provinces material damage to garden plants, flax, and weeds has been done by the beet webworm. In certain areas the moth flights of this species, both in spring and late summer, have been the heaviest experienced for many years.

In sections of Alberta, damage and loss to the cabbage crop due to diamond-back moth infestations have been estimated at 25 per cent. In south-western Ontario, the cabbage looper is reported as injurious to cruciferous crops.

Insect pests are scarce in the orchards of the Okanagan Valley, British Columbia, with the exception of the red-humped and the yellow-necked caterpillars, which are more numerous in the Vernon district than for many years.

A major flight of adults of the raspberry cane borer is expected in sections of southern Quebec in 1932, with resultant severe injury to raspberry canes due to the oviposition habits of the females.

In southern Saskatchewan and southern Alberta all types of shade trees have been heavily infested by the common red spider mite. The prevailing dry hot weather has been favorable to the increase of the mite and has lowered the vitality of the trees, with the result that the injury done is much greater than in normal years.

All forest stands containing large white spruce, in Cape Breton and Richmond Counties, Cape Breton Island, Nova Scotia, are more or less infested with the eastern spruce beetle. The infestation of this species in white spruce also continues over an area of 100 square miles on the north and south shores of the St. Lawrence River in Quebec, east of Quebec City.

In the Muskoka district, Ontario, and in sections of southern Quebec, very conspicuous damage to the foliage of birch trees has been effected by the birch leaf skeletonizer.

Cottonwood blotch miners, Zeugophora sp., appear to have greatly increased during the past two years, in southern Saskatchewan and southern Alberta. The black willow aphid is prevalent on Russian poplars in the central portion of the above two provinces.

An outbreak of the willow leaf beetle has resulted in the complete defoliation of native willows over a considerable area in Alberta and Saskatchewan.

The European earwig, which has been established for some time on the Pacific Coast of British Columbia, in Vancouver, New Westminster, and neighbouring municipalities, is now believed to be present in all the settled areas on Vancouver Island.



GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

J. R. Watson (September 21): Grasshoppers are very abundant. They are ragging young citrus trees quite severely in places.

C. M. Packard (August): Locally numerous in central and southeastern Indiana.

W. P. Flint (September 23): Grasshoppers, mainly Melanoplus spp., have been moderately abundant throughout the State, occurring in greater numbers than usual. Some moderate damage has occurred to clover and alfalfa fields in the western part of the State. The damage, however, has not been much greater than usual.

W. A. Price (September 25): Grasshoppers are very abundant.

A. G. Ruggles and assistants (September): Grasshoppers were reported as moderately abundant from practically the entire State. They are still being reported as very abundant from Kittson, Wilkin, Morrison, Olmsted, and Freeborn Counties. (Abstract, J.A.H.)

J. A. Munro (September 21): Grasshopper activity is over for the season but reports of injury have been received from five counties.

H. E. Jaques (August 27): Grasshoppers are very abundant in nine central and western counties, and moderately abundant in other parts of the State, but apparently their attacks are growing less severe. (September 24): Grasshoppers are still moderately to very abundant throughout most of the State, but doing less damage.

L. Haseman (September 28): Melanoplus femur-rubrum and M. differentialis are still abundant in Columbia, but not doing much damage to fall crops.

M. H. Svenk (August 1 - 31): During the month of August there was but very little further development of the grasshopper outbreak in Nebraska. Scattering and very moderate additional infestations developed in Polk County, and local and very moderate infestations also developed in Nemaha and Pawnee Counties, but no important damage was done in any of these three counties. During the first week in August, near Peru in Nemaha County, the fungous disease of the grasshopper Empusa grylli worked very conspicuously among the differential grasshoppers (Melanoplus differentialis Thos.) living among the willows along the Missouri River, but the disease did not develop outside of the river bottom.



- Kansas H. R. Brison (September 23): Grasshoppers are very abundant but not causing serious damage except in local areas.
- Tennessee C. Benton (August): Grasshoppers are locally abundant throughout Lincoln and adjacent counties.
- Oklahoma C. F. Stiles (September 28): Grasshoppers are still quite numerous along the creek banks and roadways in the southern central counties. Under favorable conditions there may be a serious outbreak in some parts of these counties, especially where there is considerable waste or grass land near fields that will be planted to row crops next year.
- Mississippi C. Lyle and assistants (September): Grasshoppers are moderately abundant in George, Greene and Perry Counties, and very abundant in Holmes, Panola, and Marshall Counties. (Abstract, J. A. H.)
- Louisiana W. E. Hinds (September 26): Grasshoppers are moderately abundant, feeding on sugarcane and other crops generally.
- New Mexico J. R. Eyer (September 18): Grasshoppers (M. differentialis Thos. and M. femur-rubrum DeG.) are very abundant in the western and northern parts of the State.
- Wyoming C. L. Corkins (September 18): The late summer and fall season thus far has been exceedingly favorable for grasshopper oviposition, and the indications are that there will be serious outbreaks next year where only minor, local infestations occurred this year.
- A. G. Stephens (September 21): Grasshoppers are scarce in the northeastern part of Wyoming.
- Nevada G. G. Schweis (September 25): A field inspection for grasshopper damage on September 24 made in Douglas County showed considerable damage to alfalfa. Some hoppers observed depositing eggs on ditch banks and waste lands. Disease has made its appearance in the hoppers and large numbers were observed dead on the ground while many had crawled upon the stems of sweet clover and alfalfa and died. The county agent made the statement that the hoppers had also been attacked and parasitized by a fly. Many hoppers were dissected in the field and this statement was not confirmed but we have no reason to disbelieve it.
- Utah G. F. Knowlton (September 14): Grasshopper damage is decreasing rapidly in most parts of Utah, but some crops are still being noticeable injured. M. femur-rubrum is the most abundant species found in most fields now.

L. P. Rockwood (September 2): Grasshoppers, chiefly M. femur-rubrum, are moderately abundant in Washington County, especially in clover fields.

#### CUTWORMS (Noctuidae)

O. I. Snapp (August 26): Cutworms are abundant. On this date they destroyed a part of a field of peppers which had been planted for commercial use in Montezuma. The part destroyed was on low ground.

H. E. Jacques (August 27): Cutworms are still being reported doing moderate damage in five counties. They are very abundant in Wayne County.

C. L. Corlins (August 27): I have just learned of a few minor cutworm outbreaks probably the western army cutworm (Parosagrotis orthogonia Morr.) at Casper this spring.

#### ARMYWORM (Cirphis unipuncta Haw.)

C. Benton (August): Larvae of the second brood injured some millet fields near Mt. Hermon and Fayetteville. Several acres of corn, stalks up to 10 feet tall were seen largely stripped of leaves except midribs. Worms practically all pupated by August 30. Adults emerged August 31 from pupae collected the previous day.

#### COTTON LEAF WORM (Alabama argillacea Hbn.)

C. T. Stiles (September 26): The cotton leaf worm is moderately abundant in the eastern two-thirds of Oklahoma. Hot dry weather holding it in check. (September 28): This insect is present in practically all fields of rank cotton in the eastern two-thirds of Oklahoma. They reached the section too late this year to do very much damage.

C. Lyle (September 22): Specimens or reports have been received at this office from 14 counties this season. The first specimen was collected at Inocdale, George County, on August 31. Reports and specimens received since that date indicate a rather general distribution over all parts of the State. Most of the infestations are apparently very light.

W. E. Hinds (September 26): This insect is scarce. Infestation is quite common but not yet general. Will strip too late to be effective in reducing weevil hibernation.

#### FALL ARMYWORM (Lophyla frugiperda S. & A.)

J. R. Watson (September 21): The August brood failed to materialize to any extent. We have seen very few of these insects since July, when they were so numerous.

WHITE GRUBS (Phyllophaga spp.)

- New York C. H. Hadley and assistants, Japanese Beetle Laboratory (August): Approximately 500 square feet of lawn have been destroyed by Phyllophaga sp. (native) in Hampstead.
- New Jersey R. B. Lott (August 31): White grubs are moderately abundant at Eatontown.
- Pennsylvania J. R. Stear (September 23): White grubs are scarce in Ligonier. No injury observed this season. Digging in 11 scattered sod plots, totalling 176 square feet, yielded 256 grubs.
- Nebraska M. H. Swenk (September 21): White grubs were scarce to moderately abundant in southeastern Nebraska.
- Iowa H. E. Jaques (September 24): White grubs are apparently much scarcer than usual except in the middle western part of the State.

WIPEWORMS (Elateridae)

- Maine C. R. Phipps (September 24): Wireworms are moderately abundant, attacking potatoes in various parts of the State.
- Kansas H. R. Bryson (September 23): Wireworms are reported doing damage to corn at Madison.
- Mississippi and Alabama K. L. Cockerham (August 27 and 28): Recent scouting has revealed the presence of Heteroderes laurentii Guer. in two additional counties. On August 27 Mr. O. T. Deen collected adults near Neely in Green County, Miss., and on August 28 near Leroy in Washington County, Ala.
- Mississippi N. L. Douglass (September): Wireworms have been found damaging sweetpotatoes by boring holes through them in Yalobusha and Grenada Counties.

MOURNING CLOAK BUTTERFLY (Aglais antiopa L.)

- Oregon W. J. Buckhorn (July 27 to August 1): There are countless numbers of mourning cloak butterflies flying at present south of the Medford-Anna Springs Highway and west of the Ft. Klamath Highway. They always fly into the wind and shift their course whenever the wind does. Large numbers alight on the Abies magnifica. They seem to draw something from the lower part of the needles as they run their probosces around them.



COMMON RED SPIDER (Tetranychus telarius L.)

P. M. Eastman (September 9): Specimens of injured twigs of Boxwood were received at this office today from Springfield Gardens and Bellport, Long Island. The injury is caused by red spider mites although no cast skins were found to make a definite identification.

C. Lyle (September 23): Complaints of injury to ornamentals of various kinds have been received recently from Bolton, Greenville, and New Albany.

G. F. Knowlton (September 14): Red spiders are damaging sugar beets in a number of Cache Valley fields.

M. A. Yothers (August): The common red spider has been and still is unusually abundant on apple, prune, cherry, locust, and many other kinds of plants in the Wenatchee district. In a few orchards the mites have been eliminated by Stethorus picipes Casey, a small coccinellid beetle.

JAPANESE BEETLE (Popillia japonica Newm.)

C. H. Hadley and assistants, Japanese Beetle Laboratory (August): Adults decreased rapidly shortly after the beginning of the month. There was a general desertion of most types of vegetation and a concentration on smartweed (Polygonum), which by the end of the month continued to harbor fair numbers of beetles. Most first instar larvae transformed to the second instar during the month. This constituted the dominant stage in the soil during the last half of the month. The first third instar larvae were found on August 19. Eggs decreased rapidly during the month and became relatively scarce after the middle. Scouting in the Pocono region of Pennsylvania gave negative results except for one beetle at Buckhill Falls. A new and quite heavy infestation was found at Springfield, Mass. During our surveys in this region grubs have been found in large numbers. By the end of August, scouting operations were nearly completed, and, while much of the data have not yet been critically reviewed, it seems possible at this time to indicate with a fair approach to accuracy the limits of the area within which the Japanese beetle is essentially continuous occurrence. These limits are approximately indicated by the location of the following places: New Jersey: Milford, Flemington, Somerville, Perth Amboy, Red Bank, and the coast from Asbury Park south to Ocean City, South Seaville, and west of Dennisville, the shores of Delaware Bay; Pennsylvania: Kintnersville, Buckville, Quakertown, Green Lane, Spring City, Coatesville, and Kennett Square; Delaware: Newark, and about midway between New Castle and Delaware City.

U. S. D. A. Press Service (September 18): The Secretary of Agriculture announced today that during the summer specimens of the Japanese beetle have been taken at Charleston, S. C. The department reports the collection of beetles at various places outside the previously regulated areas, including several locations in Somerset and Worcester Counties, Md., Richmond, Va., several places in western Pennsylvania, including Altoona and Erie, and scattered findings in New York State, including Little Falls, Watkins Glen, Ft. Edward, and Albany. Specimens were also found again this year at Pittsburgh and New Castle, Pa., Buffalo, N. Y., and Boston, Mass., where one or more beetles had been discovered in previous seasons, but where the department last year did not think it necessary to extend the quarantine.

New York

C. R. Crosby (August 23): Specimen received from Elmira.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut

W. E. Britton (September 24): There is much injury this season in the infested area where lawns have not been treated.

New York

C. H. Hadley and assistants, Japanese Beetle Laboratory (August): At the Jericho infestation, where the severe droughts of 1929 and 1930 reduced the abundance of the insect so that it was difficult to find grubs, they have multiplied again so that half an acre of turf injury by grubs has appeared on the lawn of the J. S. Stevens estate. The insect is definitely more abundant throughout the area than in 1930. No new infestations have been observed, but at the old infestations the abundance is rapidly increasing, except where the lawns have been treated.

ASIATIC GARDEN BEETLE (Aserica castanea Arrow.)

New York

C. H. Hadley and assistants, Japanese Beetle Laboratory (August): This species is definitely more abundant than during 1930 and more foliage injury has been observed. Heavy infestations occur on Long Island throughout the northern half of Nassau and Queens Counties, around the towns of Jericho, Glen Cove, Locust Valley, Roslyn, Old Westbury, Fort Washington, Great Neck, Little Neck, Douglaston, and Flushing. The heavy infestations on the mainland occur in the northern part of Bronx County and the southern half of Westchester County.

CEREAL AND FORAGE - CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Maryland

E. N. Cory (September 25): The Hessian fly is scarce.

o

T. H. Parks (September 26): The Hessian fly is moderately abundant.

iana

J. J. Davis (September 25): The Hessian fly is moderately abundant. Reported abundant in volunteer wheat in sections of southern Indiana.

inois

W. P. Flint (August): The Hessian fly survey of Illinois made each year during the first part of August by the Natural History Survey and the Federal Bureau of Entomology, cooperating, shows the following conditions in the different wheat-growing areas of the State.

On the whole, there has been a slight decrease in the abundance of the fly in northern and east-central Illinois. In these sections of the State the fly is relatively scarce and it is not likely that any damage will occur. In the southern end of the State there is a moderate infestation, with conditions approximately the same as last year, showing a slight decrease in all the wheat-growing sections. In east-central Illinois there has been a slight decrease with a very light infestation in this section.

In the west-central part of the State, in the section running from Randolph, Perry, Clinton and Marion Counties on the south to Hancock, McDonough, Fulton and Peoria Counties, on the north, and on the east to Tazewell, Sangamon and Christian Counties, there is an area of moderately heavy to heavy infestation. Another area of heavy infestation is found on the east side of the State, centering in Crawford County.

Insects that feed on the Hessian fly are moderately abundant in most sections, parasitism being about 50 per cent in western and southern Illinois and somewhat less in the northern part of the State.

The recent rains have started the fly coming out and laying eggs, and if these rains continue, wheat sown on the normal dates for highest yields should escape any serious infestation. If the present rainy period is followed by another period of drought, rains not occurring again until the latter part of September, the fly will come out a little later than usual and serious infestation will occur for a week or ten days after the normal date of seeding for highest yield.



Average percentage of wheat tillers infested.

County	Per cent	County	Per cent
Adams	8.0	Lawrence	17.0
Brown	9.3	Lee	1.3
Bureau	3.4	Livingston	.1
Cass	5.3	Macoupin	26.6
Champaign	1.9	Madison	11.0
Christian	9.3	Marion	15.3
Clark	8.0	Mason	12.5
Clinton	21.0	McDonough	31.0
Crawford	34.2	Menard	3.6
DeKalb	1.5	Montgomery	23.6
Douglas	1.0	Morgan	8.0
Edgar	7.2	Ogle	3.0
Edwards	6.0	Peoria	2.3
Ford	0	Perry	8.3
Fulton	18.3	Rock Island	2.7
Gallatin	8.3	Randolph	7.3
Greene	37.3	Richland	4.6
Hancock	17.2	Saline	11.0
Henry	2.7	Sangamon	8.3
Iroquois	1.2	Schuyler	4.6
Jackson	13.3	Scott	11.6
Jersey	23.3	Tazewell	5.3
Kane	1.0	Vermilion	1.2
Kankakee	1.4	Whiteside	3.5
LaSalle	1.2	Will	1.3

These figures give an average infestation for the State of about 9 per cent as compared with 12 per cent in 1930.

Average for the State 9.32

Kansas

H. R. Bryson (September 23): Dr. R. H. Painter made a survey, visiting wheat fields en route from Manhattan to Concordia, Beloit, Bennington, and Junction City, and reports finding "flax seed" or large larvae in almost every field containing volunteer wheat. The volunteer wheat which was abundant averaged about one infested plant to each clump. He reports that volunteer wheat at the College Farm contained large larvae and flax seed on September 10.

WHEAT STEM MAGGOT (Meromyza americana Fitch)

nsas

H. R. Bryson (September 23): Dr. R. H. Painter reports large larvae present in volunteer wheat at College Farm.

WHEAT JOINT WORM (Harmolita tritici Fitch)

linois

W. P. Flint (September 23):

Average percentage of wheat tillers infested.

County	Per cent	County	Per cent
Adams	.3	Lawrence	0
Brown	.3	Lee	0
Bureau	.4	Livingston	0
Cass	.3	Macoupin	.3
Champaign	.1	Madison	.6
Christian	.3	Marion	.6
Clark	.1	Mason	0
Clinton	.6	McDonough	10.0
Crawford	0	Menard	2.6
DeKalb	0	Montgomery	.6
Douglas	0	Morgan	2.0
Edgar	0	Ogle	0
Edwards	0	Peoria	0
Ford	0	Perry	0
Fulton	15.3	Rock Island	0
Gallatin	4.6	Randolph	0
Greene	1.6	Richland	0
Hancock	5.7	Saline	0
Henry	.3	Sangamon	0
Iroquois	0	Schuyler	.6
Jackson	0	Scott	.6
Jersey	1.6	Tazewell	0
Kane	0	Vermilion	0
Kankakee	0	Whiteside	1.3
LaSalle	.6	Will	0

The figures give an average infestation for the State of .6 per cent as compared with 2.5 per cent in 1930.

FALSE WIREWORMS (*Tenebrionidae*)

Washington J. Finley (About September 18): Drove three miles (from Glade to Alderdale) through a migration of these beetles, all moving in a straight westerly direction; we walked about 150 yards out on each side of the road and estimated that the beetles averaged two to a square foot.

WHEAT HEAD ARMYWORM (*Neleucania albilinea* Hbn.)

Maine H. B. Peirson (September 25): A very heavy infestation of the wheat head armyworm is reported on wild rice at South Lincoln.

CORN

EUROPEAN CORN BORER (*Pyrausta nubilalis* Hbn.)

Maine C. R. Phipps (September 24): The European corn borer is scarce.

Vermont H. L. Bailey (September 28): The European corn borer is reported as moderately abundant in the southern section of the State. Reported as present but in small numbers elsewhere.

Connecticut N. Turner (September 15 and 16): The European corn borer is present in ears and stalks of corn. Two small fields of sweet corn at Groton were moderately damaged.

W. E. Britton (September 15 and 16): The European corn borer is quite generally destructive in the southern portion of New London County.

Rhode Island A. E. Stene (September 24): The European corn borer is very abundant in spots, but moderately abundant in most cases.

New York New York Agr. Expt. Station, Geneva (August 27): The European corn borer is very abundant in western New York.

CORN EAR WORM (*Heliothis obsoleta* Fab.)

Maine C. R. Phipps (September 24): The corn ear worm is very abundant in Penobscot County.

Connecticut N. Turner (September): In several fields in Fairfield County almost every ear was damaged by the corn ear worm. It is not prevalent in the northwestern part of the State.

Pennsylvania J. R. Stear (September 23): The corn ear worm is scarce in Ligonier. Found only one worm in approximately 20 dozen ears of sweet corn harvested from my home garden.

Virginia H. G. Walker (September 25): The corn ear worm is very abundant on Chinese cabbage around Norfolk.



- North Carolina C. H. Brannon (August 25): Damage to corn on the tip and ear has been extremely severe this season.
- Florida J. R. Watson (September 21): The corn ear worm is moderately abundant. It is feeding mostly on beggarweed seeds and mining crotalaria pods.
- Liana J. J. Davis (September 25): The corn ear worm is moderately abundant. Rather abundant generally in late corn, also attacking garden beans.
- Illinois W. P. Flint (September 23): During the first part of September there has been an extremely heavy flight of adults throughout most of the State. At the present time corn has ripened and hardened so that very few eggs are being laid upon it. The moths are depositing very generally on some other plants, which often show from 25 to 50 eggs to the leaf.
- Minnesota A. G. Ruggles and assistants (September): During the early part of the month the corn ear worm was being reported as very abundant over the southern half of the State. (Abstract, J.A.H.)
- North Dakota J. A. Munro (September 21): The corn ear worm has been unusually abundant this season. Reports of its presence have been received from practically every corn-growing section of the State.
- Utah H. E. Jaques (August 27): Unusually common in field corn this year. (September 24): The corn ear worm is very abundant throughout most of the State.
- Nebraska M. H. Swenk (September 21): The corn ear worm is moderately abundant to very abundant in eastern Nebraska.
- Kansas H. R. Bryson (September 23): The corn ear worm has done considerable damage to corn in Kansas.
- Oklahoma C. F. Stiles (September 26): Corn ear worms are moderately abundant in central and eastern Oklahoma. Some damage to cotton bolls in bottom land and flight damage to pods of soybean in Craig County.
- Mississippi C. Lyle (September 22): Severe injury to Grohoma sorghum was reported from Crenshaw on August 28. Several complaints have been received of injury to tomatoes.
- Alabama C. E. Sanborn (September 22): The corn ear worm is very abundant.
- Utah G. F. Knowlton (September 14): The corn ear worm has been slightly more destructive than usual in Utah during the present season.

STALK BORER (Papaipema nebris nitela Guen.)

- Maine C. R. Phipps (September 24): The stalk borer is very abundant throughout the State.
- Iowa H. E. Jaques (September 24): The stalk borer is moderately abundant in Dickinson, Humboldt, Floyd, Wright, Mills, and Iowa Counties.
- Nebraska M. H. Swenk (August 1 to 31): Reports of the stalk borer boring in corn stalks were received during the first half of August from Johnson, Saline and York Counties.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

- North Carolina W. A. Thomas (September 24): The lesser corn stalk borer is now doing serious damage to strawberries and snap beans in Chadbourn. The stand of fall beans is badly broken as a result of their attacks.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

- North Carolina C. H. Brannon (August 12): The larger corn stalk borer is causing widespread damage to corn over the State.

CHINCH BUG (Blissus leucopterus Say)

- South Carolina W. J. Reid (September 23): St. Augustine grass lawns in Charleston are being severely injured by an unusually heavy infestation of the chinch bug. The insect was present and did some damage to these lawns last summer and fall but seems to be much more destructive this year. St. Augustine grass, locally known as "Charleston grass," is used quite extensively for lawn plantings in the Charleston area, being used more than any other grass. The chinch bug infestation is general throughout the city and its environs, and entire lawns are known to have been destroyed. Drought is aggravating the insect injury.
- Ohio T. H. Parks (September 25): During the corn harvest in northwestern Ohio, chinch bugs were found quite plentiful throughout the fields, and in some fields their feeding apparently hastened the ripening of the crop. The season has been very favorable and the insects have increased greatly.
- Indiana J. J. Davis (September 25): The chinch bug is scarce.
- Illinois W. P. Flint (September 23): The weather, on the whole, has been favorable to chinch bug development and a large percentage of bugs developing in the fields have now reached the adult stage.
- Minnesota A. G. Ruggles and assistants (September): The chinch bug is still being reported as moderately abundant in the southeastern corner of the State. (Abstract, J.A.H.)

H. E. Jaques (August 27): Chinch bugs are very abundant in Clay County.

L. Haseman (September 28): The chinch bug is very abundant on late sweet corn, tomatoes, and on garden beans in Columbia. There are 2 or 3 to an ear of late corn.

H. R. Bryson (September 23): Chinch bugs are very scarce at Manhattan. Damage was not so severe in the south-central and southeastern counties as might have been expected from the number of old bugs which successfully passed the winter.

J. M. Robinson (August 20): The chinch bug was abundant in cornfields August 10 at Huntsville, Madison County.

CORN LANTERN FLY (Peregrinus maidis Ashm.)

C. Lyle (September 22): Specimens of the corn lantern fly, were abundant in a cornfield at A. & M. College on September 17.

CORN LEAF APHID (Aphis maidis Fitch)

M. H. Swenk (August 1 to 31): During the period from August 12 to 21 there were numerous complaints of an abundance of the corn-leaf aphid on the tassels and in the leaf axils of the corn. These reports came mostly from the central part of the State, from Platte and Boone Counties north to Holt County and south to Clay and Franklin Counties. Apparently, however, no very serious damage was done.

CLOVER

GREEN CLOVER WORM (Plathypena scabra Fab.)

C. R. Willey (September 22): The green clover worm did considerable damage to soybeans in Hanover County, several fields being badly damaged on August 10. Many moths were flying and pupae were easily found in debris on the ground.

W. A. Thomas (August 19): A few fields of soybeans in the vicinity of Chadbourn have become so heavily infested that the growers have been forced to harvest them for hay several weeks earlier than the usual harvesting date. Practically every field in the section is more or less injured. Snap beans are also being attacked. There is little parasitism.

C. H. Brannon (August 12): An unusually serious outbreak is occurring all over eastern North Carolina, damaging soybeans mostly. Damage to alfalfa in the Piedmont also noticed.

C. Benton (August): A rather severe and general outbreak was observed occurring on soybeans and occasional field of cowpeas



throughout August in Marshall, Bedford, Lincoln and Franklin Counties. Several hundred acres infested, much of the crop being cut earlier than planned/<sup>in</sup> order to avoid further loss.

CLOVER APHID (Amuraphis bakeri Cowan)

- Utah G. F. Knowlton (September 18): The clover aphid has been only moderately abundant in northern Utah during the present season.
- Oregon L. P. Rockwood (September 2): Clover heads in Washington County are not as sticky with honeydew as usual.

PEA APHID (Illinoia pisi Kalt.)

- Oregon L. P. Rockwood (September 2): A few aphids have been observed in alfalfa fields and on Scotch broom in Washington County. N alates seen August 11.

ALFALFA

ALFALFA WEEVIL (Phytonomus posticus Gyll.)

- Wyoming C. L. Corkins (August 27): The alfalfa weevil is very abundant at Casper, causing more damage this year than ever before recorded. The weevil reduced foliage on the first cutting in some fields from 90 to 95 per cent.

GARDEN WEBWORM (Loxostege similalis Guen.)

- Indiana J. J. Davis (September 25): The garden webworm was reported abundant and destructive to alfalfa at Plymouth August 29.
- Illinois W. P. Flint (September 23): The alfalfa webworm has been abundant throughout the State and has caused considerable injury to newly sown alfalfa fields.
- Kansas H. R. Bryson (September 23): The garden webworm was still doing damage to alfalfa as late as August 29 at Manhattan.
- Nebraska M. H. Swenk (August 1 to 31): From August 7 to 10 a few reports were received from Saline and Gage Counties of an abundance of the garden webworm, working on the third cutting of alfalfa, and more or less seriously injuring it.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina, Say)

- Mississippi G. I. Worthington (September 18): The three-cornered alfalfa hopper is general in all alfalfa fields in Washington and Bolivar Counties. Damage is very noticeable and in some cases severe.

Mississippi

W. E. Hinds (September 26): The three-cornered alfalfa leafhopper has caused a number of complaints of injury to alfalfa fields ranging from Tallulah to Baton Rouge along the Mississippi Valley. The injured fields turn yellow and close examination shows that the stems have been practically girdled by the feeding of the nymphs close to the ground. The gall formation following this feeding cuts off the flow of sap to the tops and the cortex tissues just above the gall break down and decay.

A TREEHOPPER (Campylenchia latipes Say)

Nebraska

M. H. Swenk (August 1 to 31): During the third week in August an alfalfa field in southwestern Saunders County was found to have been obviously injured by this treehopper.

SORGHUM

SORGHUM MIDGE (Contarinia sorghicola Coq.)

Mississippi

C. Lyle (September 22): Sorghum heads received from West Point on September 15 apparently had been severely injured by the sorghum midge. The heads were not filling out properly as a result of the attack.

SOUTHERN CORN STALK BORER (Diatraea zeaedocella Dyar)

Virginia

C. R. Willey (September 28): Specimens of the larger corn stalk borer were received from Walkerton in sorghum.

GRASS

SOD WEBWORMS (Crambus spp.)\*

West Virginia

L. M. Peairs (August 29): Sod webworms are very abundant in northern West Virginia.

Ohio

T. H. Parks (September 26): Although serious injury to lawns and golf courses occurred during July and the first half of August, no recurrence of this trouble occurred in September. Moths were caught in large numbers until about September 10, but since that date they have not been observed or captured at lights in large numbers.

---

\*Correction: The note credited to Packard and Noble (Vol. 11, No. 7, Page 436) refers to conditions in Indiana, not Tennessee.

Ohio  
and  
Indiana

C. M. Packard (August): Continued widespread injury to lawns and golf greens in Indiana and Ohio during first half of August. Adults very abundant. Two species have been determined by W. Schaus as C. teterellus Zinck. and Crambus n. sp. These were taken from infestations at Battle Ground, Ind.

Indiana

J. J. Davis (September 25): Sod webworms continued to be reported as lawn pests, apparently referring to infestations several weeks ago. Reports came from Richmond August 22, Michi City August 25, and Covington September 11.

Kentucky

W. A. Price (September 15): The sod webworm is still numerous and active in lawns in Lexington.

M. L. Didlake (July): Specimens of parasites (Apanteles crambi Weed) emerged July 28 from sod webworms collected in Fayette County, July 15.

Iowa

H. E. Jaques (September 24): The heavy damage of the summer moths has been greatly reduced, but worms are still present in many regions. The adults are very abundant.

#### TIGER MOTHS (Apantesis spp.)

Tennessee

J. U. Gilmore and J. Milam (September 24): Apparently the fourth brood of what is probably Apantesis phalerata Harr. is now present on forage crops and tobacco at Clarksville.

C. Benton (August): Considerable numbers of mature third-brood larvae of Apantesis phyllira Drury are present in cornfields, roadsides and waste lands throughout southern Marshall County. Practically no commercial damage observed. The first pupae were taken in the field August 28.

#### A TOAD BUG (Geocoris bullatus Say)

Nebraska

M. H. Swenk (August 1 to 31): This large-eyed false chinch bug was quite injurious to lawns in and around Lincoln during the middle of August.

#### A MINING BEE (Halictus versatus Robertson)

Mississippi

J. M. Langston (June 25): These specimens were sent to us on June 13 by Inspector W. L. Gray, Natchez, with the following comment: "Hundreds of these little insects live in the ground in holes. They are ruining the sod in my yard in places by making the surface of the ground uneven. Early in the morning and late in the afternoon they may be seen in their holes with their heads about even with the surface of the soil. Last season there was only one little place where they were noticed in the front yard. Now they are general." (Det. Grace Sandhouse.)



CHUFA

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi

C. Lyle (September 22): Specimens were collected from chufa plants at Perkinson on August 21. Only slight injury had been caused by them.

A CURCULIONID (Barini)

Mississippi

C. Lyle (September 22): Curculio larvae, presumably of the Barini group (det. by A. F. Satterthwait), were reported as causing severe injury to chufa plants at Perkinson on August 21.

COWPEAS

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

North Carolina

W. A. Thomas (August 15): During the past month the cowpea pod weevil has been very abundant in the Chadbourn section of North Carolina and has caused rather severe damage on many farms. Larvae collected in late July proved to be very heavily parasitized by Myiophasia aenea Wied.

Alabama

J. M. Robinson (August 20): Adults are depositing eggs in large numbers at the present time. (September 22): The cowpea curculio is very abundant in the southern half of the State. Reported from Birmingham, Grady, Ensley, <sup>and</sup> Fairford.

SOYBEANS

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Mississippi

W. E. Hinds (September 26): The soybean caterpillar has increased more slowly than last season and has done no damage as yet at Baton Rouge. However, many fields of soybeans have been stripped in the southern part of the State, where they were being grown for seed and no poisoning was done.

Alabama

C. F. Stiles (September 28): The velvetbean caterpillar was found feeding on foliage of the soybean six miles north of Vinita. This insect is not very numerous this year and I doubt if the damage will amount to very much.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (September 26): The sugarcane borer is now increasing in abundance noticeably as the third generation matures and the fourth generation is starting. Infestation is most apparent in P.O.J. 213 cane. Egg collections made in many fields during September 1 to 15 showed no trace of Trichogramma in a number of localities. The average percentage of natural parasitism by Trichogramma in uncolonized check areas during the period from July 11 to September 1 has ranged from 6.6 to 22.6 per cent. In the average of all colonized areas during this period parasitism has ranged from 57.9 to 71.6. While in the average of fields adjacent to colonized areas the percentage has ranged from 35.6 to 68.9. It is expected that the peak of parasitism will be reached in cane fields before the middle of October on 4th generation borer eggs.

SUGARCANE BEETLE (Batheola rugiceps Lec.)

Louisiana

W. E. Hinds (September 26): Adults, evidently developed this season from eggs laid between about April 15 and June 15, have appeared quite commonly during the past month and are feeding upon the bases of young shoots of sugarcane and in fields of rice especially.

KUDZU VINE

BEAN LEAF ROLLER (Goniurus proteus L.)

Virginia

C. R. Willey (September 28): On September 27 at Richmond at Kudzu vine was found containing a heavy infestation of the bean leaf roller. The larvae were apparently full grown.

FRUIT INSECTS

APPLE

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

Washington M. A. Yothers (September 21): The woolly aphid is more abundant and injurious this season than for several years.

CODLING MOTH (Carpocapsa pomonella L.)

Connecticut P. Garman (September 21): The codling moth seems to be more abundant in commercial orchards in New Haven County than for some years.

New York N. Y. State Coll. Agr., Weekly News Letter (August 27): The codling moth is very abundant in western New York.

Pennsylvania H. M. Worthley (September 16): The codling moth is very abundant in many orchards of Franklin and Adams Counties.

Delaware L. A. Stearns (September 26): The late second and third brood larvae of the codling moth are doing but moderate injury.

Virginia W. J. Schoene (September 23): The life history studies of the codling moth in the Blacksburg and Roanoke section indicate that there will be no third brood this year. The commercial fruit growers are picking apples. They report many stings but few apples with worms. It seems that the insect has been held in check in commercial orchards in the central part of the State in spite of the heavy carry-over from last season.

Georgia C. H. Alden (September 21): The codling moth is very abundant in Cornelia. No fresh injury noted, egg laying is over, many worms are going under the bands and few are pupating. Most of the larvae are making winter cases.

Ohio T. H. Parks (September 26): The codling moth is moderately abundant generally and very abundant in Ottawa and Lawrence Counties. Lawrence is the only county in which there has not been a good degree of control generally. The infestation on the hill orchards of that county averages from 10 to 40 per cent, most the blemishes being stings that do not ruin the fruit for sale. Three commercial orchards in northern Ohio have suffered from this pest this year, even though a good spraying program was followed. Nearly all of the orchards in the State outside of Lawrence County have had good control with sprays. We have had a partial third brood of larvae in Lawrence County, though not so many as appeared in 1930.



- Illinois      W. P. Flint (September 23): Pupation of the codling moth ceased during the latter part of August and there is no indication of a late infestation such as occurred last year.
- Missouri      R. M. Jones (September 6 and 15): Some orchards are remarkably free of worms, whereas others have from moderate to severe infestations. The last record of third brood emergence was taken on September 6, but larvae were observed entering the fruit until September 15.
- Iowa      H. E. Jacques (September 24): The codling moth is more than ordinarily in evidence in many parts of the State.
- Mississippi      C. Lyle and assistants (September): The codling moth is very abundant in Tate County, only county in which I have made observations.
- New Mexico      J. R. Eyer (September 18): The codling moth is very abundant in all parts of the State.
- Utah      G. F. Knowlton (September 22): The codling moth is from moderately to very abundant in northern Utah.
- Washington      M. A. Yothers (September 21): The codling moth is more abundant and injurious this season than it has been for several years.
- Washington      E. J. Newcomer (September 21): The codling moth is undoubtedly more abundant this season than it has ever been. This was brought about by a combination of a mild winter, an early spring, and unusually favorable weather for oviposition during May and June. Moths from overwintering larvae emerged early and deposited many eggs, resulting in a very heavy second brood and a partial third brood. Almost continuous cool, cloudy weather since September 5 has practically put a stop to codling moth activity for the season. A total of 11,630 moths have been caught in 5 baits during the season, as compared with 4,016 moths caught in the same number of baits located in the same trees in 1930. The orchard was given practically the same treatment both years, being sprayed seven times during the season.
- “      APPLE AND THORN SKELETONIZER (Homorophila pariana Clerck)
- New York      A. E. Stone (September 24): Many apple orchards in the Niagara district were burned completely brown from attacks of the apple and thorn skeletonizer.
- “      RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)
- Kentucky      W. A. Price (September 25): The red-humped apple tree caterpillar defoliated many apple trees at Stamping Ground, Scott County.

SPRING CANKER WORM (Paleocrita vernata Peck)

Massachusetts E. L. Chambers and assistants (June): Canker worms are very abundant. Many trees have <sup>been</sup> defoliated in Vernon County.

APPLE LEAFHOPPERS (Cicadellidae)

Connecticut P. Gernan (September 21): The leafhopper Ermoda rosae L. has appeared in injurious numbers in several large orchards in the State. This is apparently the second brood appearing this year in New Haven and Hartford Counties.

Delaware L. A. Stearns (September 26): The apple leafhopper is very abundant throughout the State.

Maryland E. H. Cory (September 24): Leafhoppers (several species) are doing considerable damage to apples throughout the State.

Virginia W. J. Schoene (September 23): The several species of leafhoppers attacking apples have been present in small numbers throughout the summer, the numbers increasing as the summer advances. In a few orchards in Shenandoah and Roanoke Counties the insects are so numerous that the fruit is being spotted and the foliage injured by the feeding of the adults. Fully 20 per cent of the damage is being caused by Typhlocyba poraria McAtee. These are present more or less in the adult stage. There were just a few nymphs on the foliage September 15. The weather has been dry and very hot during the month of September, and it is believed that the high temperatures have been favorable to the insects.

Wisconsin T. H. Parks (September 26): Apple leafhoppers (Ermodasca fabae Harr.) are very abundant generally, and in many commercial orchards they are causing serious spotting of the fruit.

Wyoming C. E. Sanborn (September 22): The apple leafhoppers are moderately abundant.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Pennsylvania J. R. Stear (September 23): The San Jose scale is very abundant in Ligonier. Apples on unsprayed trees show many scale spots.

Georgia C. H. Alden (September 21): The San Jose scale is scarce in Cornelia. No crawlers have appeared.

O. I. Shapp (September 2): The infestation <sup>now</sup> is about average for this season of the year in Fort Valley.

- Florida J. E. Watson (September 21): San Jose scales are moderately abundant; rather more abundant than usual in September, owing to drought.
- Ohio T. H. Parks (September 26): This insect is very abundant. It has caused more blotches on apples than for many years.
- Indiana J. J. Davis (September 25): The San Jose scale is moderately abundant. Many orchards will be heavily infested by fall.
- Illinois W. P. Flint (September 23): The San Jose scale is increasing throughout the State. There is a more general and heavier infestation in commercial orchards than has been the case for several years.
- Kentucky W. A. Price (September 25): The San Jose scale is increasing rapidly in the State. This has been an outstanding feature in our orchard and nursery inspection work this year.
- C. O. Eddy (September 1): There is an unusual<sup>a</sup> abundance of San Jose scale, especially on apples and plums, and to a slightly lesser extent on peaches.
- Iowa H. E. Jacques (August 27): The San Jose scale is very abundant in Osceola County.
- Missouri L. Haseman (September 28): This insect has developed greatly this summer and the fruit is badly blotched in some orchards.
- Mississippi C. Lyle and assistants (September): Very abundant throughout the State, decidedly increasing in destructiveness, particularly to sand pears. (Abstract, J.A.H.)

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

- Indiana J. J. Davis (September 25): The oyster-shell scale is moderately abundant.
- Minnesota A. G. Randles and assistants (September): The oyster-shell scale is reported as very abundant from the southern three-tenths of counties in the State. (Abstract, J.A.H.)
- Iowa H. E. Jacques (September 24): The oyster-shell scale is moderately abundant in Emmet County.

APPLE MAGGOT (Rhagoletis pomonella Walsh)

- Maine C. R. Phinns (September 24): The apple maggot is very abundant throughout the State.



Michigan

R. H. Pettit (September 21): We are enjoying an almost complete immunity from the attacks of apple maggot. Very few affected apples have been sent in thus far this year.

TWO-SPOTTED WITE (Tetranychus bimaculatus Harvey)

Washington

M. A. Yotters (August 28): This wite has been and still is much more abundant than usual in the Wenatchee section. In a few instances the voracious coccinellid beetle Stethorus picipes Casey has cleaned up the infestations completely.

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck)

Connecticut

F. Garmon (September 21): The oriental fruit moth is more abundant than last year. Some orchards are severely infested. Parasitism is low in many places.

Rhode Island

A. E. Stone (September 24): The oriental fruit moth is moderately abundant.

New Jersey

R. B. Lott (August 31): The oriental fruit moth is moderately abundant at Eatontown.

Pennsylvania

H. H. Worthley (September 16): The oriental fruit moth is relatively scarce in Adams County.

Delaware

L. A. Stearns (September 26): Infestation of peaches by the oriental fruit moth is light.

Maryland

E. H. Cory (September 25): Oriental fruit moths are moderately abundant.

Virginia

W. J. Schoone (September 25): The peaches in most of the orchards in Virginia were only mildly infested by the peach moth during this month. The infestation ranged from one to three per cent. The commercial crop has been picked. A few third-brood adults are present in the orchard, and if peaches were present there would be many fourth-brood larvae. It is expected that there will be some fourth-brood larvae in apples near peach orchards. During the season of 1931 the damage to twigs has been fairly light throughout the State.

West Virginia

L. M. Peairs (August 29): The oriental fruit moth is moderately abundant at Morgantown.

Georgia

O. I. Shapp (August 31): Pears on trees in yards in Fort Valley are heavily infested. These few pear trees are the only host available since the close of peach harvest about a month ago. The infestation in commercial peach orchards was very light throughout the season.

- Georgia C. H. Alder (September 21): The oriental fruit moth is scarce in Cornelia. It is now in hibernation.
- Ohio T. H. Parks (September 26): The oriental fruit moth is very abundant on late peaches in Ottawa and Erie Counties. In southern and central Ohio no commercial injury was done to the Elberta peach crop. In northern Ohio the injury has been more severe, though in Ottawa County not over 5 per cent of the Elberta peaches were rendered unfit for sale. The Leroy Free, which were harvested late in September, were very heavily infested in that county. Some growers lost more than half of their peaches.
- Indiana J. S. Davis (September 25): The oriental fruit moth is moderately abundant.
- Kentucky W. A. Price (September 25): The oriental fruit moth is moderately abundant. Dr. Eddy reports that the oriental fruit moths taken with codling moths from apples constituted from 1 to 3 per cent of the total.
- Missouri R. M. Jones (September 22): Several adults were reared at the laboratory in July. This material was collected in the Marionville section and represents the first record of this species in southwestern Missouri.
- Tennessee H. G. Butler (August 31): The trap catch of moths was much higher in August than at any previous time this year in Reame County. The maximum 24-hour catch of 1,284 moths was removed from the traps August 20. During August over 1,200 parasites were reared from infested twigs. These parasites are mainly Macrocentrus delicatus Cress. In most orchards fruit infestation was of minor importance this year.
- Arkansas A. J. Achreman (August 28): The oriental fruit moth showed up in the commercial peaches from Springdale this year. Springdale, which is located about twenty miles south of Bentonville, is the only commercial peach section in northwestern Arkansas. A light infestation was found in an orchard of Georgia Belle and Elberta, which produced no peaches last year because of crop failure.
- Alabama J. M. Robinson (September 22): The oriental fruit moth is moderately abundant on pears in Auburn and Morbury.
- Mississippi State Plant Board, Press Release (August 31): The oriental fruit moth was reported in eight widely scattered localities, but this pest is seldom serious on trees that are sprayed for curculio according to schedule.
- Louisiana W. E. Hinds (September 26): Injured pears indicate the presence of this species at Arite, although stages were not seen.

Mississippi

P. D. Sanders (September 2): Several quince trees standing in a block of peach trees at Glover had a fair crop of fruit. The peaches had been harvested two<sup>weeks</sup>/earlier, and the quinces were ripening. The oriental fruit moth was present in practically 100 per cent of the quinces, often 2 or 3 worms per fruit.

PEACH BORER (Synanthedon exitiosa Say)

New Hampshire

L. C. Glover (September 27): The peach borer is scarce.

Connecticut

W. E. Britton (September 23): The peach borer is moderately abundant.

Georgia

C. H. Alden (September 21): The peach borer is scarce in Cornelia; some fresh injury has been observed.

O. I. Shoop (September 2): The first eggs to hatch this season at Fort Valley were recorded on August 21. This is about two weeks later than last year. Moth emergence has not yet reached the peak.

Florida

J. R. Watson (September 21): The peach borer is moderately abundant.

Indiana

J. J. Davis (September 25): Peach tree borers were reported from Fowler, Kokoro, Kerton, Indianapolis, Carrollsburg, Arroy, and South Bend, from August 30 to September 21.

Minnesota

H. G. Butler (August 31): In 1930 (in Roane County) the late summer increase in adult borer emergence began August 13 and in the following 30 days 84 per cent of the season's emergence occurred. This year this increase has been delayed until August 28.

Alabama

C. E. Sanborn (September 22): The peach borer is moderately abundant.

Alabama

J. W. Robinson (September 22): The peach borer is moderately abundant at Auburn and Linden.

Mississippi

C. Lyle and assistants (September 20): Peach borers are from moderately to very abundant throughout the State.

PLUM CURCULIO (Conotrachelus nemoralis Hbst.)

New Jersey

R. B. Lott (August 31): The plum curculio is very abundant at Eatontown.



- Virginia W. J. Schoone (September 22): No second brood was produced in breeding cages. There was some injury to unsprayed orchards and light injury to the peaches near the woods in a few orchards.
- Georgia O. I. Sharp (August 29): The second-generation larvae are now entering the soil to pupate. There was a very light second generation this year in Fort Valley.
- C. H. Alden (September 21): Plur curculios are scarce in Cornelia. They are in hibernation. A few adults may be seen.
- Ohio T. H. Parks (September 25): This insect still continues scarce all over the State. Very few blemishes on apples can be attributed to it.
- Indiana J. J. Davis (September 25): The curculio was reported abundant in plums at Fowler August 30.
- Kentucky W. A. Price (September 25): The plum curculio is scarce.
- Minnesota A. G. Ruggler and assistants (September): The plum curculio was reported during the month as very abundant in Lac qui Parle, Hennepin, and Lyon Counties. (Abstract, J.A.H.)
- Missouri L. Haseran (September 28): Worms are more abundant in late peaches than they have been in former years in Columbia. But little feeding has been done by adults.
- Tennessee H. G. Butler (August 31): Adults of the first and second broods emerged from soil at insectary August 21. Overwintering adults taken in jarring early last spring were still depositing a few eggs in August. Harvest infestation by curculio was much less than normal this year in Roane County.
- Oklahoma C. E. Sanborn (September 22): The plum curculio is moderately abundant.
- Alabama J. M. Robinson (August 20): The plum curculio is moderately abundant at Irondele.
- Mississippi State Plant Board, Press Release (August 31): Although a bumper crop of peaches was produced, curculio or worm damage was heavy in unsprayed orchards.
- C. Lyle and assistants (September): The plum curculio is moderately abundant in Tupelo, Lee County. Very prevalent in late varieties of peaches.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Indiana J. J. Davis (September 25): The shot-hole borer was reported on peach at Lafayette, September 2, and at Fort Wayne on peach and plum, September 14.

Mississippi State Plant Board, Press Release (August 31): Fruit tree bark beetles were moderately to very abundant in Alcorn and Panola Counties.

PLUM

A GALL MITE (Phyllocoptes fockeni No. & Tr.)

Idaho C. Wohlschlag (August 28): I had previously sent specimens of the mite to Dr. Ewing who wrote me under date of July 31 that he identified the species questionably as P. fockeni No. & Tr. He says they appear to be a European species which had not been recorded in this country before and he calls it a gall mite rather than a rust mite. We have not seen any effects of the mite as causing galls or blisters, but the leaves of brunes are decidedly russeted and the injury appears to be entirely superficial.

LESSER PILEY BORER (Synanthedon pictipes G. & R.)

Georgia O. I. Sharp (September 2): There are very few larvae in peach trees now, as it is between generations at Fort Valley. Moths which will produce the overwintering brood of larvae are now emerging.

North Dakota J. A. Munro (September 21): Plum borer injury has been serious at Mandan. An inspection of a planting containing numerous varieties of plums showed 90 per cent of the Redwing variety injured by the pest. Other varieties were not seriously attacked.

RASPBERRY ET AL.

PETTER AND SALT MOTH (Archidasis cognataria Guen.)

New York C. R. Crosby (August 25): Specimen received from a city park, Niagara Falls. It attacks raspberry and currant.

RASPBERRY ROOT BORER (Berbercia marginata Harr.)

Washington J. Wilcox and E. W. Baker (August 21): In an examination for this insect at Puyallup no adults were found, but several unhatched eggs were found on the under surface of raspberry leaves. On August 27 E. W. Baker found unhatched eggs on El Dorado blackberries at Christopher, but on loganberries adjacent to the blackberries no eggs or adults were found.

RASPBERRY FRUIT WORM (Byturus unicolor Say)

Washington

J. Wilcox (September 2): Soil siftings at Puyallup showed 30.4 per cent to be in the first  $\frac{1}{4}$  inch. None was found below 4 inches. Percentages in the various stages of development were: 56.6 per cent adults, 34.8 per cent pupae, and 8.7 per cent larvae. No berries were left on the vines.

BROWN SOFT SCALE (Lecanium coryli L.)

Washington

S. E. Crumb (September 17): In Texas blackberries the older canes were plastered with a Lecanium, probably capreae L. Half and sometimes three quarters of these canes were dead, probably due to the scale, although there is a possibility that these canes naturally die back at this time of year.

A MITE (Eriophyes essigi Hessian)

Washington

W. T. Baker (July 13): Wild black berries (Rubus leucodermis) around Puyallup are mottled, red, white, and black by this mite. This species has never been observed before on this host.

J. Wilcox and W. T. Baker (August 22-24): Several severe infestations to Evergreen and Himalaya blackberries have developed near Puyallup and Bellevue. Bush blackberries of the varieties Texas, Snyder, El Dorado, Ward, and Kittatinny have been examined near Puyallup and Sumner and found to contain mites, but no typical red berry symptoms were observed. Red raspberries and loganberries were examined and the mite found, but no red berry symptoms.

GRAPE

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Ohio

T. H. Parks (September 25): Grape berry moths are causing considerable injury in some commercial vineyards at the west end of Lake Erie. The degree of infestation is as high as 30 to 40 per cent in a few badly infested vineyards, but does not average high over the western Ohio grape belt. The situation is not so bad as it has been in some previous years.

GRAPE LEAFHOPPER (Erythroneura comae Say)

Iowa

C. E. Ainslie (September 14): At Sioux City several varieties of this species have done severe injury to grape, woodbine, and other vines, destroying their appearance and vitality. They are present in swarms this fall, favored by the recent dry hot weather.



Nebraska

W. H. Srenk (August 1 to 31): The grape leafhopper, which early in the season seemed present in normal numbers only, developed a much greater than normal abundance during August, and the woodbine vines in the cities of eastern Nebraska were badly discolored, if not largely defoliated, during the month by these pests.

Mississippi

State Plant Board, Press Release (August 31): The grape leafhopper was very abundant in George County.

Utah

G. F. Knowlton (September 8): The grape leafhopper continues to become more damaging to Virginia creepers, and in some cases to grapes. Numerous complaints were received at this Station concerning this pest in northern Utah.

#### COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Indiana

J. J. Davis (September 25): Cottony maple scale reported on grape at Monon August 27. The upper surfaces of the leaves were black with sooty mold fungus, indicating a heavy scale infestation. This insect was also reported from Ridgeville September 18.

#### CURRENT

#### IMPORTED CURRENT WORM (Pteronidea ribesi Scop.)

Wisconsin

E. L. Chambers and assistants (June): Worms reported as very abundant on current bushes in Portage County.

#### BLUEBERRY

#### BLUEBERRY WAGGOT (Phagoletis pomonella Walsh)

Vine

C. R. Phipps (September 24): Blueberry waggots are very abundant throughout the State.

#### PECAN

#### BLACK PECAN APHID (Myzocallis furibonnellus Fitch)

Georgia

J. B. Gill (September 26): The black pecan aphid was very destructive during the month of August and the first week in September in pecan orchards throughout southwestern Georgia. Very serious defoliation occurred in some orchards.

Alabama

J. M. Robinson (September 22): The black pecan aphid is very abundant, and pecan trees are being defoliated at Auburn.

Mississippi

State Plant Board (August 31): The black pecan aphid was moderately abundant in George and Stone Counties.

C. Lyle and assistants (September): Rather heavy infestations of the black pecan aphid were observed at Durant and Lexington, on September 7 and 8, by Inspector D. T. Grimes. Reported as very abundant at Ocean Springs, and in Jackson County, some pecan trees are being defoliated. Moderately abundant around Gulfport during the past two weeks.

AN APHID (Monellia costalis Fab.)

Georgia

J. B. Gill (September 26): This aphid has been unusually abundant in some pecan orchards, but did not appear to cause defoliation or injury to the foliage, as was the case with the black pecan aphid.

A STINK BUG (Brochymena quadripustulata Fab.)

Georgia

T. L. Bissell (September 22): Adults and large nymphs of Brochymena quadripustulata Fab. were jarred in abundance from pecan trees during August and September at Strouds, Monroe County.

A CASE BEARER (Acrobasis palliolella Rag.)

Georgia

J. B. Gill (September 26): For the past three weeks larvae have been going into winter quarters and constructing their hibernacula on the buds of pecan trees. Infestation by this species is not as severe as it has been in some years.

PECAN CASE BEARER (Acrobasis juglandis LeB.)

Mississippi

State Plant Board (August 31): The pecan leaf case bearer was reported in Adams, George, and Jackson Counties.

H. Gladner (September 20): The pecan leaf case bearer is moderately abundant at Ocean Springs.

PECAN CIGAR CASE BEARER (Haploptilia caryaefoliella Clem.)

Mississippi

C. Lyle (September 1): Pecan leaves were received from Laurel. Only slight injury was observed on pecans. Seemingly these insects prefer varieties of pecans that are subject to scabbing. (Det. by A. Busch, September 11, as pecan miner, Cameraria caryaefoliella Clem.)

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Mississippi

C. Lyle and assistants (September): The pecan shuck worm is scarce at Ocean Springs. Shuck worms had caused considerable dropping of immature pecans in the vicinity of Pascagoula and Moss Point, up to September 10.

TWIG GIRDLER (Oncideres cingulatus Say)

Virginia C. R. Willey (September 28): We are getting our usual complaints about the work of the twig girdler on hickory, pecan, elm and persimmon.

North Carolina W. A. Thomas (September 2): Adults began emerging from a field cage near the laboratory at Chadbourn today. The larval mortality in the severed twigs collected last fall was very high.

Georgia T. L. Bissell (September 22): Took one adult male from pecan August 22, first record of the season, at Milner. Have not as yet observed any cutting of twigs.

J. B. Gill (September 26): Adults of the pecan twig girdler are now showing up in pecan orchards and are causing considerable damage by severing the branches of trees adjacent to woodlands.

Mississippi H. Dietrich (September 20): The hickory girdler reported at Lucedale on September 15 had all emerged, but no new girdled branches have been found so far.

PECAN WEEVIL (Balaninus caryae Horn)

Alabama J. M. Robinson (August 20): The pecan weevil is moderately abundant at Auburn, Camp Hill, and Lanett.

Georgia T. L. Bissell (September 22): Oviposition has practically ceased, though a few adults may be found in trees in Milner. Weevil infestation in prematurely dropping Schley pecan nuts for July, August, and September was 7 per cent. Infestation in same orchard in 1930 was 22 per cent.

OBSOLETE SCALE (Chrysomphalus obscurus Comst.)

Mississippi C. Lyle and assistants (September): The obscure scale is found pretty generally attacking pecans in Tallahatchie County.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Georgia J. B. Gill (September 26): The citrus whitefly is moderately abundant at Albany.

Florida J. R. Watson (September 21): The citrus whitefly is very abundant. The September brood is very large and about 10 days late.



Alabama J. M. Robinson (August 20): The citrus whitefly is very abundant on shrubbery at Auburn. (September 22): Moderate abundant in Ashford.

Mississippi State Plant Board (August 31): The citrus whitefly was reported on citrus in the southern part of the State and on ornamental plants in other sections.

Louisiana W. E. Hinds (September 26): Citrus whitefly is very abundant.

FLORIDA RED SCALE (Chrysomphalus ficus Ashr.)

Florida J. R. Watson (September 21): The Florida red scale is moderately abundant.

Mississippi J. P. Kislenko (September 21): The Florida red scale is moderately abundant in greenhouses at Hattiesburg, Forest County.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Florida J. R. Watson (September 21): The California red scale is becoming abundant on citrus in Pinellas County. This scale has been in Florida for many years, but has never given us any trouble before, but in this one county, at least, it is evidently building up a rather heavy infestation.

Texas F. L. Thomas (August 15): S. W. Clark reported that the red scale has not caused so much damage as usual at Weslaco. Infestations are light and generally scattered.

PURPLE SCALE (Lepidosaphes beckii Newm.)

Florida J. R. Watson (September 21): The purple scale is moderately abundant.

Mississippi C. Lyle and assistants (September): The purple scale is scarce in the eastern part of Jackson County, and moderately abundant at Gulfport, Harrison County. It is also moderately abundant on citrus at Ocean Springs.

California Monthly News Letter, Los Angeles County Agricultural Commissioner (July 15): The purple scale hatch in years past has occurred some time during the latter part of September, October, or November in Los Angeles County. This season, however, the young scale commenced hatching quite rapidly the middle of August. This early hatching makes a condition quite favorable for scale control in many orchards in the state.

area in that both the black and purple scales can be treated at the same time. Infestations in this county are almost entirely confined to the southern citrus area around Dorney, Rivera, and Whittier.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Texas

F. L. Thomas (September 1): S. W. Clark reported that the cottony-cushion scale is becoming quite abundant throughout the whole Valley around Weslaco. Reports show it to be very generally distributed and some damage evident.

LEAF-FOOTED BUG (Leptoglossus phylloicus L.)

Florida

E. W. Benson and G. B. Merrill (September 21): This insect occurs in localized areas in some groves.

A LONGHORN BEETLE (Oncideres texanus Horn)

Texas

F. L. Thomas (September 10): Saccidrens continue to come in on citrus trees.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida

J. R. Watson (September 21): The citrus rust mite is moderately abundant. More than usual for September.

Mississippi

C. Lyle and assistants (September): The citrus rust mite is scarce in the eastern part of Jackson County, and in Stone County. It is moderately abundant at Gulfport, Harrison County.

CITRUS RED SPIDER (Paratetranychus citri McG.)

California

Monthly News Letter, Los Angeles County Agricultural Commissioner (July 15): Although we have had high temperatures over a longer period of time than in an average year, the infestations have continued to be heavy in some groves throughout the summer months. The humid condition that has prevailed during the high temperature may be the reason why the insects have survived and in some instances built up rather severe infestations at this time.

ANT (Atta insularis texana Buckl.)

Texas

F. L. Thomas (September 5): Reports received indicate more damage from cut ants than usual in Weslaco.

CARDIN'S THIRTEEN (Alcuriodicus (Metaleurodicus) cardini Buck)

Florida

G. B. Merrill (September 18): This insect has been found on several occasions during the past fourteen years along the Florida coast from New Smyrna to Key West on guava bushes.

TRUCK - CROP INSECTS

MOLE CRICKETS (Gryllotalpa spp.)

- Florida J. R. Watson (September 21): Mole crickets are giving considerable trouble to truck fields, especially in Plant City and Sanford.
- Nebraska M. H. Swenk (August 1 to 31): The common mole cricket (G. hexadactyla Perty) has been more numerous in Nebraska this season than ever before. During August inquiries were received from as far east as Cedar and Saline Counties to as far west as Sheridan, Thomas, and Keith Counties.
- Alabama J. M. Robinson (September 22): Mole crickets are very abundant and destroying many gardens in Grove Hill.

BLISTER BEETLES (Meloidae)

- North Carolina C. H. Brannon (September 12): Various species of blister beetles are causing an unusual amount of damage to truck crops and flowers over the State.
- W. A. Thomas (September 5): Several complaints have reached the laboratory of the destructive work of the black blister beetle (Epicauta pennsylvanica DeG.) on English ivy and potato plants at Chadbourn. The infestations seem to be scattered more or less over the county. This insect was also observed defoliating clematis.
- Indiana J. J. Davis (September 25): Reports of blister beetle damage continued to be received during the past month. During the State fair, September 5 to 12, hundreds of people inquired about blister beetle control. One morning from 8 to 11 a. m. sixty requests for information on this insect were made at the insect booth at the Purdue Building at the State Fair. Specific letter inquiries all referred to the black blister beetle, (E. pennsylvanica DeG.).
- Nebraska M. H. Swenk (August 1 to 31): Blister beetles continued to be reported as injurious to potatoes during the month of August, although instead of E. lewisii Fab., E. cinerea Forst. and our two common species of Macrobasis, that were the dominant species in July, the August reports referred more to E. maculata Say and E. pennsylvanica DeG.
- Alabama J. M. Robinson (September 22): The margined blister beetle (E. marginata Fab.) is abundant on potatoes in Foley.



Mississippi

C. Lyle and assistants (September): Striped blister beetles (E. vittata Fab.) are very abundant in Tate, De Soto, Panola, Tunica, Quitman, and Marshall Counties. On September 5 specimens of E. marginata were received from Utica, where they were reported as causing moderate injury to turnips. On August 24 specimens of E. lemniscata were received from Sallis, where they were reported as causing some injury to turnips.

New Mexico

J. R. Eyer (September 18): Blister beetles, E. pennsylvanica DeG., E. maculata Say, Lytta stygica Lec., Macrobasis longicollis Lec., are very abundant and are particularly injurious to potatoes, cotton, alfalfa, and beans.

FALSE CHINCH BUG (Nysius ericae Schill.)

Nebraska

M. H. Swenk (August 1 to 31): The false chinch bug badly damaged a 4-acre cabbage field in Lincoln County during the middle of August.

Mississippi

C. Lyle (September 22): Nysius ericae was reported as abundant on turnips at Greenwood on August 18, and as causing severe injury to Japanese turnips at Hattiesburg on August 24.

New Mexico

J. R. Eyer (September 18): The false chinch bug is very abundant in all parts of the State, being particularly injurious to corn and alfalfa.

Texas

S. W. Clark (August 28): No damage has been reported as caused by Nysius ericae minutus Uhler, but the bugs were noted as abundant in grasslands around Weslaco in July.

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Iowa

H. E. Jaques (August 27): The Colorado potato beetle is from moderately to very abundant in northwestern Iowa.

Oklahoma

C. E. Sanborn (September 22): The Colorado potato beetle is very abundant.

Alabama

J. M. Robinson (August 20): The Colorado potato beetle is scarce at Auburn.

Mississippi

C. Lyle and assistants (September): The Colorado potato beetle is very abundant on potatoes in the northern and north-eastern sections of the State.

W. ming

C. L. Corkins (August 27): The Colorado potato beetle is moderately abundant.

Utah G. F. Knowlton (September 22): The Colorado potato beetle is apparently eliminated at Ogden.

BEAN

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- Connecticut N. Turner (September 15): The second generation killed about half of the late string beans in New Haven and Fairfield Counties. Only well-sprayed beans had a good crop. Heavy damage was also seen in the extreme eastern part of the State. Lima beans were not so badly injured as string beans. The second generation is now emerging in numbers. There was serious damage in parts of Litchfield and Hartford Counties.
- W. E. Britton (September 23): The Mexican bean beetle is very abundant.
- Rhode Island A. E. Stene (September 24): The Mexican bean beetle is moderately abundant.
- New York N. Y. Agr. Expt. Sta., Geneva (August 27): The Mexican bean beetle is scarce in western New York.
- C. R. Crosby (September 1): Specimens of the Mexican bean beetle were received from Cheviot on August 31, and from Kingston September 1.
- New Jersey R. B. Lott (August 31): The Mexican bean beetle is very abundant in Ligonier.
- J. N. Knull (September 7): The Mexican bean beetle is very abundant in Franklin and Cumberland Counties and is destroying the late lima and bush beans.
- Delaware L. A. Stearns (September 26): Considerable damage has been done by the late brood of the Mexican bean beetle.
- Maryland E. W. Cory (September): The Mexican bean beetle is doing considerable damage throughout the State.
- West Virginia L. M. Peairs (August 29): The Mexican bean beetle is moderately abundant at Morgantown.
- Virginia H. G. Walker (September 25): The Mexican bean beetle is very abundant.
- North Carolina W. A. Thomas (September 1): Both lima and snap beans around Chadbourn have suffered severely from Mexican bean beetle activity during the past week. Most of these plants are almos

completely defoliated and dying. The beetle is also attacking cowpeas in close proximity to the beans, but the injury is not yet severe. (September 21): A few rows of cowpeas in a home garden observed today at Lumberton were almost completely defoliated by this insect. The cowpeas were adjacent to pole limas, which have been practically destroyed.

C. E. Brannon (August 15 to 31): Practically all unsprayed beans were destroyed in the Wilmington trucking section this season. Severe damage is prevalent all over the State.

Carolina

A. Iutken (September 26): The Mexican bean beetle is very abundant generally.

gia

C. E. Alden (September 21): The Mexican bean beetle is scarce in Cornelia. The infestation was light this year.

T. H. Parks (September 26): The Mexican bean beetle is very abundant on late string bean varieties.

ana

J. J. Davis (September 25): The Mexican bean beetle was reported as destructive at Liberty August 18, Winona Lake August 24, and Logansport September 3. These destructive infestations in northern Indiana are doubtless due in part to the mild winter of 1930-31.

ucky

W. A. Price (September): The Mexican bean beetle has come back strongly this year, following its decimated numbers in 1930, and bids fair to be a real pest in this State in 1932. There is a large population going into hibernation.

essee

J. U. Gilmore and J. Milam (September 24): The Mexican bean beetle is less abundant than usual on several kinds of beans at Clarksville.

ama

J. M. Robinson (September 22): The Mexican bean beetle is moderately abundant in Auburn.

ssippi

C. Lyle and assistants (September): The Mexican bean beetle is moderately abundant in the northeastern part of the State, and very abundant in the northeast corner of Monroe County.

ng

A. G. Stephens (September 21): The Mexican bean beetle is scarce in the southeastern part of Wyoming.

C. L. Corkins (August 27): The Mexican bean beetle is scarce on wheat land. There have been no reports of damage all season.

exico

J. R. Iyer (September 18): The Mexican bean beetle is reported from the northern part of the State.



BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi

G. I. Worthington (September 18): The bean leaf beetles are general and unusually heavy infestations are occurring on beans and field peas this season at Cleveland.

C. Lyle (September 22): Medium injury to beans was reported from Durant on September 5. Severe injury to beans was observed at A. & M. College on September 10.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Alabama

J. M. Robinson (September 22): The belted bean beetle is very abundant in Atmore, Foley, and Fairhope.

Mississippi

H. Dietrich (September 20): The banded Diabrotica was badly skeletonizing snap beans at Richton and Lucedale early in the month.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

North Carolina

W. A. Thomas (September 24): An extremely heavy infestation of the Fuller's rose beetle was observed on an experimental planting of beans near the laboratory at Chadbourn on September 14. As many as a dozen specimens were present on a single hill of beans. Late in the afternoon these plants were heavily dusted. Twenty four hours later, numerous dead specimens were observed beneath the plants. There has been no recurrence of the attack.

LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

Mississippi

C. Lyle (September 22): On September 4 a correspondent at Valley sent to us specimens with the statement that they were stinging young peas and beans and causing them to fall from the vines.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

North Carolina

W. A. Thomas (September 14): Late beans in the vicinity of the laboratory at Chadbourn are being seriously injured. The stalk is entered near the base of the plant and may be tunneled both upward and downward, causing the plant to die. The opening in the stalk is covered with a web in which the larva rests when not feeding.

LIMA BEAN VINE BORER (Monoptilota pergratialis Hlst.)

North Carolina

W. A. Thomas (September 3): There is an unusually heavy infestation of this insect on lima bean vines this season about Chadbourn. For several years past only a few infested vines could be observed, but now the infestation is general and some vines carry as many as three larvae.

BEAN THRIPS (Heliethrips fasciatus Perg.)

G. F. Knowlton (September 16): A few fields of beans in Logan have been observed to be suffering from bean thrips damage.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

H. G. Walker (September 25): The imported cabbage worm and the cabbage looper are moderately abundant and have been causing some damage to broccoli at the experiment station at Norfolk.

J. J. Davis (September 25): The cabbage worm was destructive at South Bend September 2.

T. H. Parks (September 26): The imported cabbage worm is very abundant.

A. G. Ruzgles and assistants (September): The imported cabbage worm was quite generally reported throughout the State, seven counties reporting it as unusually abundant. (Abstract, J.A.H.)

H. E. Jaques (September 24): The imported cabbage worm is very abundant, especially in northern Iowa.

L. Haseman (September 23): This pest has been serious all summer in Columbia, and is still abundant on late cabbage and turnips.

M. H. Swenk (August 1 to 31): The cabbage worm continued to be more than usually troublesome during the month of August.

CABBAGE LOOPER (Autographa brassicae Riley)

A. G. Ruzgles and assistants (September): The cabbage looper was reported as very abundant in southern St. Louis County. (Abstract, J.A.H.)

C. Irle and assistants (September): The cabbage looper has been observed feeding on turnips at Booneville, Prentiss County, and Corinth, Alcorn County, during September, and doing severe damage to collards near Ellisville, Jones County. Slight injury to turnip greens was reported from Cooksville on September 10.

S. W. Clark (September 10): Early plantings of cabbage seed beds have been severely infested by the cabbage looper at Weslaco.

HARLEQUIN BUG (Murgantia histrionica Hahn)

- Virginia      H. G. Walker (September 25): The harlequin bug is rather abundant and has been causing considerable injury to various crops in the Norfolk area.
- Bertha M. Bennett (October 1): Hundreds of these bugs are congregating on Cleome or spider plant at Lyon Park. No evidence of damage as yet.
- North Carolina      W. A. Thomas (September 1): This insect has increased in numbers and activity very rapidly during the past few weeks. Collards are now dying in some fields from these attacks. Egg laying seems to be extremely heavy at this time.
- C. H. Brannon (August 20): The harlequin bug is causing serious damage to corn blades in the vicinity of Wilmington, as well as unusually serious damage to the common host plants.
- South Carolina      A. Lutken (September 26): The harlequin bug is very abundant generally.
- Indiana      J. J. Davis (September 25): The harlequin cabbage bug was destructive to turnips and other garden plants, according to a report from Corydon, August 28.
- Kentucky      W. A. Price (September 25): The harlequin cabbage bug was reported as troublesome at Burnside.
- Oklahoma      C. F. Stiles (September 28): The harlequin bug has been recently reported as moderately abundant from Dewey County, where it has completely destroyed the late cabbage crop. It has also been reported from other sections of the State.
- Mississippi      C. Lyle (September 22): The harlequin bugs have been very abundant in various sections of the State during the past few weeks. Many complaints in regard to injury caused by them to fall turnips and collards have been received.
- New Mexico      J. R. Eyer (September 18): The harlequin cabbage bug is very abundant in the southern and western parts of the State.

CABBAGE WEEWORM (Heliothis undalis Fab.)

- North Carolina      W. A. Thomas (September 7): The cabbage webworm is now giving considerable trouble on spring collards being grown for winter use. The larva enters the head and tunnels the upper portion of the stalk and even some leaf stems. This work usually begins just above where the leaves are attached to the stalk. Practically all work is covered with web.



th Carolina A. Lutken (September 26): The cabbage webworm is causing considerable damage to cruciferous crops.

## CUCUMBERS

### PICKLE WORM (*Diaphania nitidalis* Stoll)

th Carolina W. J. Reid, Jr. (September 25): The pickle worm, together with the melon worm, *Diaphania hualinata* L., is causing severe damage to fall squash plantings in the Charleston area. All unpoisoned fields are being abandoned by the growers. The production of squash during the fall months is rendered very uncertain as a result of almost certain attacks by the pickle worm and melon worm. The pickle worm is attacking the buds, stalks, leaf stems, and fruit of squash plants in this vicinity. Many plants are killed before reaching the fruiting stage. This season the injury is more severe than usual. Drought has aggravated the insect injury.

souri L. Haseman (September 28): A rather severe outbreak has just appeared at Columbia. The extent of damage done over the State not yet known.

isiana W. E. Hinds (September 26): Pickle worms have occasioned numerous complaints to late crops, particularly squash. The infestation is very heavy in some localities and the prospects for a crop of marketable squashes is very small.

ama J. M. Robinson (August 20): The pickle worm is moderately abundant at Andalusia; adults are swarming.

issippi State Plant Board, Press Release (August 31): The pickle worm, which tunnels through cucurbits, except melons, has been very destructive.

### STRIPED CUCUMBER BEETLE (*Diabrotica vittata* Fab.)

sylvania H. N. Worthley (September 16): The striped cucumber beetle is very abundant in Centre County, as is also the squash bug.

h Dakota J. A. Munro and assistants (September 15): The striped cucumber beetle is scarce in Grand Forks County and moderately abundant in Kidder County.

H. E. Jaques (September 24): The striped cucumber beetle is moderately abundant in Winnebago, Wright, Delaware, Iowa and Henry Counties, and very abundant in Clay and Humboldt Counties.

homa C. E. Sanborn (September 22): The striped cucumber beetle is moderately abundant.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Mississippi C. Lyle and assistants (September): The spotted cucumber beetle is very abundant in Tupelo, Lee County, where it has injured bean vines in several fields.

Louisiana W. E. Hinds (September 26): Adults are becoming common again following scarcity during mid-summer.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror L.)

Oregon Oreg. Agr. Coll., Insect Pest Report (July): The twelve-spotted cucumber beetle is moderately abundant in Coos and Josephine Counties and very abundant in Polk County.

MELONS

MELON APHID (Aphis gossypii Glov.)

Nebraska M. H. Swenk (August 1 to 31): All through the month of August many more than the usual number of reports of injury to melon and cucumber vines by the melon aphid were received. These related chiefly to the central sections of the State, though there were some reports also from the eastern and western sections.

Missouri L. Haseman (September 28): This pest has been serious this year and has continued to be abundant up to the present time on late cucumbers or melons.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

Indiana J. J. Davis (September 25): The squash bug seems to be generally abundant. Specific reports were received of damage to melons and pumpkins at Washington August 22, to squash at Liberty August 14, and to pumpkins at Crawfordville September 15.

Illinois W. P. Flint (September 23): Adults of the squash bug are very numerous at the present time, being much more abundant than for a number of years.

Kentucky W. A. Price (September 25): Squash bugs were generally prevalent over the State, and did notable damage at Murray, Lexington, and Wilmore.

va C. N. Ainslie (September 14): Squashes, pumpkins and all other cucurbits have suffered severely in western Iowa this season. It has multiplied rapidly wherever present. Oviposition was observed to be continuous all summer. Adults will probably hibernate in unusual numbers. Natural enemies appear to be absent in this region and methods of artificial control have but slight efficacy.

H. E. Jacques (September 24): The squash bug is more than ordinarily abundant in many regions.

souri L. Haseman (September 28): The late generation is attracting attention over the State on pumpkins, squashes, and late cucumbers.

sas H. R. Bryson (September 23): The squash bug is very abundant in practically all counties.

ssissippi State Plant Board, Press Release (August 31): Squash bugs were responsible for many complaints.

y Mexico J. R. Eyer (September 18): The squash bug is very abundant in the southern and western parts of the State.

#### SQUASH BORER (Melittia satyriniformis Hbn.)

lana J. J. Davis (September 25): The squash vine borer was destructive to squash at Liberty August 14, and at Lafayette early in September.

tucky W. A. Price (September 25): The squash vine borer was reported doing serious damage to squash at Wilmore.

#### CELERY

#### GREENHOUSE LEAF TYER (Phytactenia rubiculis Guen.)

higan R. H. Pettit (September 21): The celery leaf tyer is more plentiful than it has ever been before in Michigan. It seems to be present from Benzie County in the north clear down to the Indiana State line.

#### BEETS

#### BEET LEAFHOPPER (Eutettix tenellus Baker)

oming A. G. Stephens (September 21): The beet leafhopper is scarce in the eastern and east-central parts of Wyoming.

to G. F. Knowlton (September 22): The beet leafhopper is from moderately to very abundant in northern Utah. The damage is spotted, ranging from slight to severe.



BEET WEBWORM (Loxostege sticticalis L.)

North Dakota J. A. Munro (August 22): The only report of the beet webworm was from Renville County and stated that the moths are so thick that when one walks through the tall grass or sweet clover they rise in clouds. There have always been a few of them but this year they are very numerous.

North Dakota J. A. Munro and assistants (September): The sugar beet webworm was quite abundant, very thick in spots, and did some damage to gardens. It fed almost entirely on Russian thistle.

SALT-MARSH CATERPILLAR (Estigmene acrea Drury)

Ohio T. H. Parks (September 25): These larvae were attacking sugar beets in Ottawa County during September. They came too late to injure the crop seriously, but the beets tops presented a very ragged appearance due to the feeding of the larvae. No other crops in the neighborhood were reported as being infested.

ZEBRA CATERPILLAR (amestra picta Harr.)

North Dakota J. A. Munro (September 21): Tiger worms (M. picta Harr.) were reported on August 22 as damaging sunflowers, corn, and potatoes at Watford City. Another report, received under date of August 25, stated that the worms were very abundant at Hope and that they were causing injury to corn.

Utah G. F. Knowlton (September 14): The zebra caterpillar has caused moderate damage to sugar beets throughout the season in most portions of northern Utah where beets are grown.

TURNIPS

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Ohio T. H. Parks (September 25): Serious injury by turnip aphids was observed in a field near Vermilion, September 24. The aphids had entered the field from a nearby orchard and had traveled about one-third way across the turnips before checked by lady beetles and their larvae. At the time of observation the aphids were apparently under control by the predators.

Tennessee J. U. Gilmore and J. Milan (September 24): Turnip aphids destroyed many earlier seedings of fall and winter turnips.

Mississippi C. Lyle and assistants (September): The turnip louse is scarce on fall turnips.

SOUTHERN CABBAGE WORM (Pieris protodice Edw. & Lec.)

Mississippi C. Lyle (September 22): Larvae identified by J. M. Langston as P. protodice were observed on turnip greens at Cooksville and Itta Bena on September 15. Only slight injury was reported in each case. Severe injury was observed on turnips at A. & M. College on September 21.

CROSS-STRIPED CABBAGE WORM (Evergestis rimosalis Guen.)

Mississippi C. Lyle (September 22): Larvae identified by J. M. Langston as Evergestis rimosalis were reported moderately abundant on turnip greens at Itta Bena on September 11.

PARSLEY

PARSLEY WORM (Papilio polyxenes Fab.)

Mississippi C. Lyle (September 22): On August 31 a correspondent at Oxford sent us four larvae of Papilio polyxenes with the information that they were collected from parsley. The extent of the injury was not reported.

STRAWBERRY

STRAWBERRY ROOT WORM (Paria canella Fab.)

North Carolina W. A. Thomas (August 11): Several of the older fields of strawberries have been almost completely destroyed within the past few weeks by this insect eating the foliage. Young plants during the past year seemed to be almost entirely exempt from these attacks.

GRAPE COLASPIS (Colaspis brunnea Fab.)

North Carolina W. A. Thomas (August 25): A rather light infestation of this insect is present on strawberries, snap beans and soybeans and is causing some damage.

A FLEA BEETLE (Haltica litigata Fall)

Ireland E. N. Cory (September 24): This beetle is doing considerable damage to strawberries.

MINT

MINT FLEA BEETLE (Longitarsus menthapagis Gent.)

Indiana J. J. Davis (September 25): The mint flea beetle was reported from LaForte August 26 and from North Liberty September 11. The mint growers of northern Indiana are becoming much alarmed over this new pest.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula Fab.)

North Carolina C. H. Brannon (August 25): The extremely light damage to tobacco beds in the spring was offset by extremely serious damage to plants in the field, especially the latter part of the season.

Tennessee J. U. Gilmore and J. Milam (September 24): The tobacco flea beetle necessitated considerable employment of insecticides at Clarksville. Burley tobacco was especially subject to attack.

POTATO TUBER WORM (Phthorimaea operculella Zell.)

Tennessee J. U. Gilmore and J. Milam (September 24): The potato tuber moth is more abundant than in the average year. It is attacking tobacco.

HORRWORMS (Protoparce spp.)

North Carolina C. H. Brannon (August 25): This is the worst outbreak the State has experienced in many years. Both early and late damage was noticed.

W. A. Thomas (September 4): These larvae are unusually abundant in the old tobacco fields and in many cases have stripped all foliage from the stalks and are now migrating in search of more food. Hundreds were observed crossing a hardsurfaced highway today.

TOBACCO BUDWORM (Heliothis virescens Fab.)

North Carolina C. H. Brannon (August 20): The budworm damage to tobacco this season is the most severe that has been noticed for many years.



FOREST AND SHADE - TREE INSECTS

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

diana J. J. Davis (September 25): The flat-headed borer was reported during September on apple at Indianapolis and Martinsville, on Norway maple at Huntington and Wabash, on hard maple at South Bend, and on maple (kind not specified) at Garrett, Paragon, and Monon.

braska M. H. Swenk (August 1-31): More than the usual number of complaints of injury to trees by flat-headed borers were received during the period here covered.

ssissippi H. Dietrich (September 20): Full-grown larvae were dug from the base of a live pecan tree near Piave on September 15.

HAG MOTH (Phobetron pithecium S. & A.)

w York C. R. Crosby (August 28): Specimens were received from Boonville.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

uth Carolina A. Lutken (September 26): Bagworms have been unusually abundant on arborvitae this summer.

diana J. J. Davis (September 25): Bagworms were reported attacking arborvitae at Terre Haute and Indianapolis the last of August.

ntucky W. A. Price (September 25): The bagworm has caused much damage to evergreens in the State this year. One nurseryman reported having picked and destroyed 15 gallons of the bags.

ssas H. R. Bryson (September 23): Dr. R. C. Smith reports bagworms present at Manhattan.

H. B. Hungerford (September 23): The bagworm has damaged cedars in some places in Douglas County this season.

abama J. M. Robinson (August 20): The bagworm is moderately abundant on arborvitae at Denopalis.

ssissippi J. Milton (September 21): Many complaints were received during the latter part of August and the first part of September in regard to the bagworm. It has been very abundant on arborvitae in Corinth.

FALL WEBWORM (Hyphantria cunea Drury)

- Vermont H. L. Bailey (September 28): Work of the fall webworm came very much into evidence during the late summer throughout much of the State. Some trees were nearly covered by webs in the southeastern section of the State.
- Rhode Island A. E. Stone (September 24): The fall webworm has been more abundant this year than in any other season during the last 20 years.
- Connecticut W. E. Britton (September 24): H. cunea is prevalent throughout the State but particularly abundant in New London, Tolland, and Hartford Counties. Hickory and ash seem to be severely infested and many trees are stripped.
- Pennsylvania H. M. Worthley (September 16): Fall webworms are very abundant in Mifflin, Juniata, and Cumberland Counties. Very large webs are evident on locust for miles along the Juniata River.
- Delaware L. A. Stearns (August 24): Fall webworms are unusually abundant, especially in northern Delaware.
- Virginia C. R. Willey (September 28): Fall webworms are rather numerous in Richmond on a number of hosts. They seem to prefer Ailanthus.
- Georgia J. B. Gill (September 26): The fall webworm has been less troublesome than usual in pecan orchards during August and September.
- Mississippi C. Lyle and assistants (September): During September this insect increased somewhat in pecan orchards, but on the whole the damage was much less conspicuous than usual. (Abstract, J.A.H.)
- Louisiana W. B. Hinds (September 26): Pecan trees are being attacked less than usual.

GIPSY MOTH (Parthetria dispar L.)

- Rhode Island A. E. Stone (September 24): Egg clusters are more abundant than in either of the last two years.

A PSOCID (Ceratipsocus sp.)

- Mississippi H. Dietrich (September 20): A psocid (Ceratipsocus sp., det. J. M. Langston) is present in large colonies on the bark of pecan, oak, and scuppernong at Lucedale. They do no harm, but are noticed by many, and consequently inquiries are numerous.

ASHASH BORER (Podosesia fraxini Luger)

North Dakota

J. A. Munro (September 21): The ash borer is very abundant at Mandan. Numerous reports have been received of its injury to plantings in several other portions of the State. Mr. E. J. George writes as follows: "While visiting the southwestern part of the State the last week in August I found practically every ash planting infested. No serious breakage or killing has resulted at present (September 2). It would appear, however, that damage will result in the near future, as the trees are badly infested."

WOOLLY BEECH APHID (Prociphilus imbricator Fitch)

Maryland

W. M. Davidson (September 6): Woolly aphids infesting large numbers of native beech along the northwestern branch of the Anacostia River. In cursory observation the only predators seen were a few large larvae of Fenisea tarquinius Fab.

BIRCHBIRCH LEAF MINER (Fenusa punila Klug)

Maine

C. R. Phipps (September 24): The birch leaf miner is very abundant throughout the State.

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

Maine

H. B. Peirson (September 25): The birch leaf skeletonizer was reported August 26 as heavily infesting birch in eastern Maine.

A SAWFLY (Pontania pectoralis Marlatt)

Maine

H. B. Peirson (September 25): A birch sawfly was reported August 23 as locally abundant on birch at Oquossoc.

AN APHID (Calaphis sp.)

Maine

H. B. Peirson (September 25): A green birch aphid was reported August 26 as very abundant on birch at Caratunk.

BOXELDERBOXELDER BUG (Leptocoris trivittatus Say)

Delaware

L. A. Stearns (September 19): Boxelder bugs have been reported from Laurel.



- Indiana J. J. Davis (September 25): Boxelder bugs were reported abundant on boxelder trees at Crown Point September 22. Most of the specimens seen were adults.
- Illinois W. P. Flint (September 23): Reports of infestation are now beginning to come in. Apparently the bugs are a little more numerous than usual.
- North Dakota A. L. Morling (September 17): Boxelder bugs are moderately abundant in McLean County.
- Iowa C. N. Ainslie (September 14): This pest has been multiplying for the past two or three years and this fall is gathering in great red patches in sunny spots on boxelder trees around Sioux City. Adults are uncommon but nymphs abound by the million.
- Nevada G. G. Schweis (September 25): Mr. Lee Burge of this department reports large numbers of boxelder bugs present in southern Nevada and doing damage to boxelders in the vicinity of Las Vegas.

BOXWOOD LEAF MINER (Monarthropalpus buxi Labou.)

- Ohio E. W. Mendenhall (September 3): The boxwood leaf miner has been very bad in one of the nurseries at Marietta.

CATALPA

CATALPA SPHINX (Ceratonia catalpae Bdv.)

- Virginia C. R. Willey (September 28): We had quite a few calls asking for control the first of the month, indicating the usual presence in Richmond of this insect.
- Ohio E. W. Mendenhall (September 4): Caterpillars are doing some damage to Catalpa bungei in a nursery in Washington County.
- Illinois W. P. Flint (September 23): The catalpa sphinx has been very abundant in southern and south-central Illinois, completely defoliating many small catalpa plantations as well as catalpa shade trees in lawns and parks.

ELM

ELM LEAF BEETLE (Galerucella xanthorelaena Schrank)

- Vermont H. L. Bailey (September 28): The elm leaf beetle was moderately abundant in Brattleboro and Bennington. Evidence of its work was noted at Winooski, which constitutes the northernmost record for Vermont.

necticut

W. E. Britton (September 24): Although the activities of this insect are now about over for the season, it is a good time to report on general prevalence. Much injury resulted to unsprayed elm trees throughout Connecticut, except possibly at the higher elevations. Less injury for instance in Litchfield County than elsewhere, though injury was present there at the lower levels. All along the shore and throughout the central valley area of the State there was much injury. Many trees were defoliated and have since put out a new crop of small leaves.

E. W. Mendenhall (September 8): A severe outbreak was found on elm trees on three properties at Lagondia Avenue and Main Street in Springfield. This is the first outbreak reported from Springfield, although infestation occurred nearby.

#### WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

consin

F. A. Thatcher (June 13): Many elms in Trempealeau County are infested with black aphids that cause a curling of the leaves.

aska

M. H. Swenk (August 1-31): Over the south-central part of the State, from Boone, Greeley, Platte, Adams, and Nuckolls Counties west along the streams and in the cities, the elm trees were heavily infested with aphids during August. These insects produced such copious quantities of honeydew that it dripped upon the sidewalks, fences, and other objects under the trees, much to the disgust of many complainants.

#### EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

E. W. Mendenhall (August 29): The limbs of the elm trees on the Ohio State University campus are dying on account of European elm scale. Nearly all the elm trees in and about Columbus are badly infested.

iana

J. J. Davis (September 25): European elm scale was reported abundant at Indianapolis September 11.

#### FIR

#### SITKA SPRUCE GALL APHID (Gilletta cooleyi Gill.)

sachusetts

E. P. Felt (September 25): The Sitka spruce gall aphid, Gilletta cooleyi, was reported as somewhat abundant on Douglas fir in the Boston area.

#### HEMLOCK

#### HEMLOCK SPANWORM (Elloripia fuscicollaria Guen.)

ie

H. B. Pearson (September 10): Moths are very abundant on hemlock near Lincoln.

HICKORY

HICKORY PHYLLOXERA (Phylloxera caryaecaulis Fitch)

New York

E. P. Felt (September 25): The hickory leaf stem aphid, P. caryaecaulis, was reported in small numbers from a Long Island locality.

LINDEN

HICKORY TUSSOCK MOTH (Halisidota caryae Harr.)

Pennsylvania

J. N. Knull (August 28): Caterpillars are very plentiful on various forest trees, especially linden, throughout Potter County this year.

LOCUST

LOCUST BORER (Cyrtene robiniae Forst.)

Indiana

J. J. Davis (September 25): The locust borer was destructive at Marion and Lafayette early in September.

MAPLE

MAPLE BORER (Synanthedon acerni Clem.)

Indiana

J. J. Davis (September 25): The maple sesiid (Synanthedon acerni) was reported from Indianapolis August 31, attacking maple.

WOOLLY MAPLE LEAF SCALE (Phenacoccus acericola King)

Connecticut

W. E. Britton (September 23): This scale seems to be more abundant on sugar maple around New Haven than for several years

New York

E. P. Felt (September 25): The maple Phenacoccus was reported as being injurious to sugar maples in the Poughkeepsie area.

OAK

ROUND-HEADED BORERS (Agilus spp.)

Pennsylvania

J. N. Knull (September 1): Oaks throughout Pennsylvania are showing brown leaves on small branchlets. The injury is largely due to the girdling habit of the small larvae of A. arcuatus Say. This insect seems to be abundant this year. Many trees



have also been attacked by the two-lined chestnut borer, A. bilineatus Web., The vitality of the infested trees had been lowered by defoliators, during late spring and by the drought of 1930-31.

FRUIT TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

F. A. Thatcher (June 13): Leaf curlers are very abundant on oak trees in Trempealeau County, preventing the development of the leaves.

OAK TWIG PRUNER (Hypermallus villosus Fab.)

H. B. Peirson (September 25): The oak twig pruner infestation is very heavy in Franklin.

C. R. Willey (September 28): A severe infestation was observed in a group of large oak trees on a lawn near Hicks Wharf in Mathews Co., September 2.

A LEAF MINER (Cameraria conglomeratella Zell.)

G. L. Bond (August 29): Injury to oak leaves from the Eastman Memorial Foundation of Laurel was very severe, and trees in various parts of the city have also been heavily infested. (Det. A. Busck, Sept. 11.)

A LACE BUG (Corythucha floridana Heid.)

E. W. Berger and G. B. Merrill (September 21): Specimens from oak were received from Fort Pierce.

OBSOURE SCALE (Chrysomphalus obscurus Const.)

E. W. Mendenhall (September 8): Oak trees in Edgewood Park Addition, Springfield, are badly infested with the obscure scale.

FLANNEL MOTH (Lagoa crispata Pack.)

W. E. Britton (September 23): Lagoa crispata Pack. is reported more abundant than usual on apple, oak, and strawberry in Niantic, East Woodstock, and South Norwalk.

FINE

NANTUCKET PINE SHOOT MOTH (Rhyacionia frustrana Scudd.)

J. N. Knoll (September 1): A heavy infestation of the Nantucket shoot moth was reported in a plantation of pitch pine (Pinus rigida Miller) at Cheyney.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

Connecticut

R. B. Friend (September 23): The European pine shoot moth is common in many plantations of red pine in the State, particularly in the southwestern part. Considerable spread occurred this year.

PINE DEVIL MOTH (Citheronia sepulchralis G. & R.)

Alabama

J. M. Robinson (September 22): The pine devil moth is moderately abundant. Larvae are feeding on pine needles in Thomasville.

RED-HEADED PINE SAWFLY (Neodiprion lecontei Fitch)

Pennsylvania

E. P. Felt (September 25): Leconte's sawfly is somewhat prevalent in the Philadelphia area, half-grown second-brood larvae being abundant upon shoots of Scotch pine the third week in September.

ABBOT'S SAWFLY (Tenthredinidae)

Mississippi

C. Lyle (September 22): Sawfly larvae (not yet determined) were reported on September 15 by Inspector R. P. Colner as stripping needles from pine trees at Pascagoula.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

New England

E. P. Felt (September 26): The white-pine weevil has been somewhat generally injurious over much of southern New England and southeastern New York.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Indiana

J. J. Davis (September 25): The pine leaf scale was abundant in spruce at Batesville September 12.

Mississippi

H. D. Smith (September 20): A scale (Chionaspis pinifoliae-heterophyllae, det. L. E. Myers) is quite common on young slash pine (Pinus caribaea) in swamps of northern Jackson County.

POPULAR AND WILLOW

A GALL MITE (Eriophyes populi Mal.)

Wyoming

C. L. Corkins (September 18): A gall which has become exceedingly serious upon certain varieties of poplars at Casper has been identified as Eriophyes populi. Trees 40 to 50 feet in height are covered with galls from top to bottom, and on the sides of large limbs. The galls are of unusual size and abundance. Dr. Felt calls it "an extreme infestation." It certainly is very unusual.

POPLAR TENT MAKER (Ichthyura inclusa Hbn.)

E. W. Mendenhall (August 29): Many willows in central Ohio are infested with larvae of the poplar tent maker.

J. J. Davis (September 25): The poplar tent maker was abundant and partially defoliated poplar at Lafayette, September 4.

PUSS CATERPILLAR (Megalopyge opercularis S. & A.)

C. R. Willey (September 28): Specimens of puss caterpillar were sent in from Waverley by County Agent C. W. Hubbard. They were taken from pussy willow September 17.

WILLOW BORER (Cryptorhynchus lanathi L.)

W. W. Baker (September): Fordinanea aenicolog and one small dipteran were found living in the frass at the exit holes earlier in the season. Till recently we had not found this species infesting anything but two or three native willows, but one poplar was found infested on the 14th, and the willows over a much more extensive area than we previously realized have been found to be infested to a slight extent.

SPRUCE

A WEEVIL (Pissodes sp.)

W. W. Baker (September 22): Mr. Thaanum, horticultural inspector for Stagit County, reports considerable damage in one planting of Colorado blue spruce at Burlington. One native spruce at Sedro-Wooley was also reported infested. Mr. Thaanum's description and his recognition of a Pissodes in our collection, indicates that the insect in question belongs to this genus.

SPRUCE GALL APHID (Cherax abietis L.)

H. B. Peirson (September 25): There is a heavy infestation of the spruce gall louse on spruce in a plantation at Brighton.

C. R. Crosby (August 28): Specimens of the aphids were received from Westfield, where they were attacking spruce.

AN APHID (Pineus pinifoliae Fitch)

H. B. Peirson (September 25): The spruce gall (P. pinifoliae) is prevalent on spruce along the coast as far east as Waite and Barre.



SPRUCE BUDWORM! (Harmoloba fumiferana Clem.)

Oregon

J. A. Beal (July 13): A budworm was found feeding heavily on white fir, Douglas fir, and larch in the Wildwood camp ground in the Ochoco National Forest. Supervisor Kuhns, of the Whitman National Forest, reports large areas of dead and dying white fir in the vicinity of Halfway. He says the budworms were killing the fir in this area on September 5. (Specimen identified by C. Heinrich.)

SYCAMORE

SYCAMORE LACEBUG (Corythucha ciliata Say)

Connecticut

H. Turner (September 15): Sycamores along the west shore and Suffield were heavily attacked; also in the Housatonic Valley to the Massachusetts State line.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Virginia

C. R. Willey (September 28): The walnut datana is very abundant in Richmond section, occurring on black walnut, English walnut, pecans and hickory. It created considerable interest due to its habit of clustering on trunks for molting.

Georgia

J. B. Gill (September 26): There has been a very light infestation of the walnut caterpillar in pecan orchards of this section (Albany).

Tennessee

J. U. Gilmore and J. Milan (September 24): Numerous instances of complete defoliation on black walnut were noted at Clarksville.

Nebraska

M. H. Swenk (August 1-31): The walnut caterpillar stripped many walnut trees of their leaves in southeastern Nebraska during August, and was the cause of many inquiries and complaints.

Kansas

H. R. Dryson (September 23): Dr. E. G. Kelly reports that practically every walnut tree between Manhattan and Lawrence has been defoliated. Observations in the vicinity of Manhattan indicate this condition to be true here also. Dr. Kelly also reports *Datanas* attacking apple and oak rather generally over the State. Oak, apple, and sumac have been defoliated at Manhattan.

INSECTS AFFECTING GREENHOUSE AND  
ORNAMENTAL PLANTS AND LAWNS

BUMBLE FLOWER BEETLE (Euphoria inda L.)

York W. E. Blauvelt (September 7): A specimen of this insect was collected from gladiolus at Penn Yan.

aska M. H. Swenk (August): Farmers in Holt and Greeley Counties reported many beetles devouring the milky kernels at the tips of the corn ears.

ASH-GRAY BLISTER BEETLE (Macrobasis unicolor Key.)

abama J. M. Robinson (September 22): This beetle is very abundant on clematis, destroying vine foliage in Birmingham.

THREE-LINED POTATO BEETLE (Lema trilineata Oliv.)

York C. R. Crosby (September 1): Specimens were received from Rochester, where they were attacking Japanese lantern plants.

A GALL MITE (Eriophyes eucricotes Nal.)

ssachusetts E. P. Felt (September 25): This insect was received from Boston where there is apparently a somewhat general infestation.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

orgia J. B. Gill (September 26): The cottony-cushion scale has been reported from scattered localities in southern Georgia, the infestations being restricted to ornamentals.

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

yland E. N. Cory (September 25): The West Indian cherry scale was observed at Takoma Park on ornamental cherry.

LACEBUGS (Tingididae)

ssissippi C. Lyle (September 22): Severe injury to verbena plants by lacebugs at Kosciusko was reported on August 27. Chrysanthemum plants injured by these insects were received from Batesville on September 17.

GIANT HORNET (Vespa crabro L.)

e York P. M. Eastman (September 10): Specimens of this insect were received today from Walden. The sender stated that they are attacking lilac bushes in a vigorous way. They girdle the branches, eating the bark. When the shadow strikes the bushes,

they immediately discontinue operations and go to the bushes on which the sun is shining. Their destruction undoubtedly will be very serious.

B. A. Porter (September 24): A report has been received from Larchmont of injury by the giant European hornet to the young bark of apple trees. The same insect has been reported from Narrowsburg as feeding on pear fruit.

ALDER

ALDER FLEA BEETLE (Haltica bimarginata Say)

Maine

H. B. Peirson (August 24): This insect is very abundant on alder in Eastern Maine.

ASTER

SALT-MARSH CATERPILLAR (Estigmene acraea Drury)

Indiana

J. J. Davis (September 25): The woolly bear caterpillar was reported as defoliating asters at Corydon September 8.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluakalani Kirk.)

Mississippi

C. Lyle and assistants (September 15): This aphid is very abundant, accompanied by mildew, on crepe myrtle at Natchez.

DAHLIA

SUNFLOWER WEEVIL (Rhodobaenus 13-punctatus Ill.)

Mississippi

J. Milton (September 21): Cocklebur billbugs were found to be injuring dahlias seriously at Corinth September 12. They were boring down through the center of the stalks, causing the plants to wilt badly.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Virginia

H. G. Walker (September 25): The euonymus scale has been very abundant and has caused severe injury to many euonymus shrubs in and around Norfolk.



R. B. Deen (September 5): The euonymus scale has practically killed several Euonymus japonica shrubs at Tupelo, Lee County.

# GLADIOLI

## A THrips (Thysanoptera)

H. Turner (September 23): One grower with about 20,000 bulbs lost most of his blooms; another lost about 10 per cent. Otherwise the thrips, although universally present, are not serious. Four species have been found; apparently none of them are Taeniothrips gladioli M. & S.

## GLADIOLUS THrips (Taeniothrips gladioli M. & S.)

E. W. Mendenhall (September 14): This insect was destructively abundant in Ohio for the first time in 1930, when it did considerable damage in the Cleveland area. This year the damage has extended farther south and is abundant at Ravenna and other points.

C. R. Crosby (September): Specimens of this thrips were received from New Hartford August 25; Morton September 3, and Cherry Creek September 8.

W. E. Blauvelt (September): Specimens of gladiolus thrips were received from Victor August 16, Rochester August 28, and Syracuse September 5.

# NEW JERSEY TEA

## A SCALE INSECT (Targionia helianthi Parrott)

H. Dietrich (September 20): A scale (R. helianthi, det. L. E. Myers) was so abundant on New Jersey Tea (Ceanothus americana) in the woods near Leaksville on August 24 that many of the plants had been killed.

# SWEET PEA

## GREENHOUSE CENTIPEDE (Sentigerella immaculata Newp.)

E. W. Mendenhall (September 9): Sweet pea vines in one of the greenhouses in Xenia are suffering greatly on account of garden centipedes.

J. J. Davis (September 25): What was probably the greenhouse centipede was reported damaging sweet pea at Kokomo August 24.

INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicinae)

New York

P. M. Eastman (September 18): Owing to excessive moisture conditions, mosquitoes have been very abundant for the past two months and were extremely annoying to citizens living in the suburban sections of Albany.

Alabama

J. M. Robinson (August 20): Mosquitoes are abundant at Auburn.

Mississippi

C. Lyle and assistants (September): The salt-marsh mosquito, Aedes sollicitans Walk., was especially abundant along the coast during part of the month. More complaints of various species (Aedes aegypti L., Psorophora fusticata Wied., Psorophora chapperoi D. & K., Aedes atlanticus D. & K., Aedes trivittatus Coq., Aedes sollicitans Walk., and Megarthinus septentrionalis D. & K.) were received generally from over the State than at any time during the summer.

K. L. Cockerham (August 25): On the night of August 25 the Mississippi coast was subjected to an influx of salt-marsh mosquitoes. Since that date it has been almost impossible to remain out in the fields or in grassy places. They are very numerous at Picagune, a distance of thirty miles from the coast. The species concerned in this "flight" are Aedes sollicitans Walk. and A. taeniorhynchus Wied., with the majority of them belonging to the former.

EYE GNATS (Hippelates sp.)

South Carolina

J. N. Tenhet (September 23): Eye gnats are worse than for many years. Sore eyes or conjunctivitis is almost epidemic among children in this community. It is very unusual for eye gnats to be so abundant and troublesome this late in the fall. Possibly the severe drought and continued heat are responsible.

Florida

W. E. Dove (September 17-20): Eye gnats (H. pusio Mall.) were numerous at Marianna, Live Oak, Lake City, Pensacola, Panama City, and at points between these localities. They were present about the eyes of persons and the eyes of cattle. At different places conjunctivitis was reported by laymen. This species was commonly observed about the eyes of persons on the coast. According to fishermen, "sore eyes" occur during the fall months in the vicinity of Mobile, Ala.

Mississippi H. Districh (September 20): The gnats (Hippelates sp.) are extremely abundant in George, Greene, and Perry Counties, being especially annoying in unscreened buildings and out of the wind.

R. P. Colmer (September 12): Eye gnats have been very abundant in the northern part of Jackson County.

S. W. Clark (September 10): Eye gnats have been very abundant and annoying during the past few weeks at Weslaco.

SAND FLIES (Culicoides spp.)

North Carolina D. G. Hall (September 15-18): C. furens Poey., the tropical sand fly, was found from Wilmington, N. C., to Charleston, S. C. In this area the yellow sand flies, principally C. melleus Coq., were most numerous. Other species were collected from this area.

North Carolina J. B. Hall, D. G. Hall, and W. E. Dove (August 20 to September 30): Sand flies known to us as C. melleus continued to emerge in cages located over natural breeding areas throughout the month. As this species increased in number, C. furens showed a slight decrease. The latter is a tropical species. On August 30, C. canithorax Hoff. began to emerge in such cages. The latter becomes most prevalent during the autumn and spring months. Sand flies were present in residences at Charleston on September 10.

Florida W. E. Dove (September 18-20): North of Jacksonville C. furens were very abundant, especially about 5 a.m. During the evening C. melleus were numerous south of Jacksonville. Other species also were encountered.

Panama W. E. Dove (September 18-20): Specimens of C. melleus and other yellow sand flies were collected at Mobile, Ala., Gulfport, Miss., and Panama City, Fla. At these localities C. furens was present but in smaller numbers. Fishermen report annoyance throughout the year.

DEER FLIES (Chrysops spp.)

Florida W. E. Dove (September 20): West of Jacksonville "deer flies" Chrysops univittatus Meig. were very abundant.

Panama W. E. Dove (September 18): "Deer flies" are annoying in the marshy areas in this vicinity.



HUMAN FLEA (Pulex irritans L.)

Kansas

H. B. Hungerford (September 23): A very heavy infestation of the human flea in a barn yard near Overbrook has been giving trouble for the past year. This summer the farmer reported that he could not keep his team under control in trying to cultivate corn near the swine yard. The fleas were astonishingly abundant.

FLEAS (Ctenocephalus spp.)

New York

W. E. Blauvelt (September 3): Specimens of C. canis Curtis were received from Fultonville, where they were infesting a house.

W. Moore (September 28): \*Through one of the fumigating companies working in New York City since 1908 I have obtained the information that this year is probably the greatest year for flea abundance of any since they have been in business. They also mentioned the abundance of fleas in 1916.

South Carolina

W. E. Dove (September 1-20): Cat fleas (C. felis Bouche) and dog fleas (C. canis Curtis) have been annoying at Charleston. In one instance, visits of neighborly cats during one week resulted in an infestation of a residence.

Illinois

W. P. Flint (September 23): The usual number of reports have been received concerning flea infestations, most of these coming from central Illinois.

Kentucky

W. A. Price (September 25): Forty-two inquiries were received in the office of the State Entomologist during the past 30 days in regard to the control of fleas. Practically all were dog flea infestations in houses.

Kansas

H. B. Hungerford (September 28): There are several serious infestations of dog fleas in Lawrence this month. In one neighborhood the lawns are abundantly infested, much to the unhappiness of those who dwell thereabout.

CATTLE

STABLE FLY (Stomoxys calcitrans L.)

Maryland

Berlin-Ocean City News (September 17): Clouds of insects, mostly flies and mosquitoes, swept over a 20-mile area along the Worcester County coastal peninsula, south of Ocean City, Friday and Saturday, invading herds of wild cattle and wild ponies, leaving twenty-one dead animals strewn along the beach between Ocean City and Green Run Coast Guard Station.

The insects drove the wild animals from the beach into the ocean surf, where they drowned. Others, bitten by the pests, were unable to reach the surf and, weakened by loss of blood,

fell down on the beach, where they were quickly exterminated.

Bathers at Ocean City on Friday were constantly annoyed by insects, even while bathing in the surf, it was reported.

S. L. Crosthwait (September 24): S. calcitrans is reported attacking horses, hogs, cattle, and mules in Wicomico County.

North Carolina  
and  
South Carolina

D. G. Hall (September 15-18): At points on the Atlantic coast between Wilmington, N. C., and Charleston, S. C., this species was found to be the most serious pest of livestock in this area during September. Dairies reported large reductions in milk production. Some cattle were driven to sheds for protection. Breeding places about barns appear to be too small to account for the large number of these flies.

South Carolina

Commandant at Fort Moultrie (September 10): The animals at this army post are suffering greatly from an invasion of S. calcitrans. With the help of the department we were able to rid ourselves of the first influx. Since then the wind changed, we got another crop, and are now fighting again.

Florida

W. E. Dove (September 16-20): The dog fly (S. calcitrans) was observed on cattle at Pensacola and Panama City. It is considered a serious pest of cattle and dogs and is often annoying to man.

Missouri

L. Haseman (September 28): The county agent at Perryville reports general serious outbreaks of stable flies.

Alabama

W. E. Dove (September 16-20): The dog fly was observed on cattle at Mobile.

Mississippi

W. E. Dove (September 16-20): The dog fly was observed on cattle at Gulfport.

#### SCREW WORM (Cochliomyia macellaria Fab.)

North Carolina

J. B. Hull (September 1): About September 1 there was a marked decrease in the number of screw-worm flies. This may be due in part to dry weather conditions in the vicinity of Charleston.

#### HORN FLY (Haematobia irritans L.)

Missouri

L. Haseman (September 28): The county agent at Perryville reports serious outbreaks of horn flies. They are serious generally.

HORSE

HORSE FLIES (Tabanus spp.)

- South Carolina D. G. Hall and W. E. Dove (September): There has been a decrease in the number of tabanids about cattle. The predacious "horse guards" (Bembex sp.) average from 2 to 4 to the animal.
- Florida W. E. Dove (September 20): West of Jacksonville T. turbidus Wied. was abundant in the pine and palmetto lands having some marshy areas.
- Missouri L. Haseman (September 28): The county agent at Perryville reports serious outbreaks of horse flies. They are serious generally.
- Utah G. F. Knowlton (September 16): Horse flies are very abundant at Locomotive Springs at the present time, annoying cattle and people.

H O U S E H O L D A N D S T O R E D - P R O D U C T

I N S E C T S

TERMITES (Reticulitermes sp.)

- General T. E. Snyder (July-August): During the months of July and August there were 308 cases of damage by termites reported to the Bureau of Entomology. The following list gives the number of cases reported from each State:

Alabama - 13	Louisiana - 11	Pennsylvania - 6
Arkansas - 5	Massachusetts - 7	South Carolina - 10
California - 17	Maryland - 6	Tennessee - 18
Connecticut - 3	Michigan - 5	Texas - 30
District of	Mississippi - 3	Utah - 1
Columbia - 14	Missouri - 12	Virginia - 26
Florida - 39	Nebraska - 1	Washington - 1
Georgia - 12	New Jersey - 2	Wisconsin - 1
Illinois - 3	New York - 6	Phillippine Islands -
Iowa - 5	North Carolina - 21	
Kansas - 2	Ohio - 6	
Kentucky - 3	Oklahoma - 9	

- North Carolina W. A. Thomas (September 5): Some of the strawberry growers at Chadbourn are having trouble with termites on new land, where they turned the plants, causing them to die. No damage to plants growing on old land free of decaying wood has been reported.



J. J. Davis (September 25): Termite damage was reported from Richmond, Milan, Sullivan, Martinsville, Elkhart, and Crawfordsville, August 22 to September 21. At Logansport they damaged chrysanthemums on August 21.

M. H. Swenk (August 1-31): From Douglas County came two reports of serious injury to houses by our common termite, R. tibialis Banks.

J. M. Robinson (August 30): Termites are abundant at Birmingham and Florence. (September 22): Termites are moderately abundant at Birmingham.

State Plant Board (August 31): Termites were generally abundant and many people received advice about protecting their houses from these pests.

M. L. Douglass (September 12): Termites were noticed generally in Yalobusha, Grenada, and Montgomery Counties.

#### ANTS (Formicidae)

M. R. Smith (September 19): Mr. J. A. Berly recently sent me for determination a form of fire ant, Solenopsis geminata Fab., subsp. rufa Jerdon, which was collected at Summerville on September 7.

M. R. Smith (September 18): Mr. H. H. Wedgworth, Associate Plant Pathologist at the Everglade Experiment Station, Belle Glade, has sent me two species of ants which he states are infesting houses there. One of these has been determined as Pharaoh's ant, Monomorium pharaonis L., and the other as M. floricola Jerdon.

M. H. Swenk (August 1-31): During August, as also earlier in the season, ants were the cause of much annoyance to housekeepers. An unusually large number of these complaints, for this region, related to the small red ant (M. pharaonis).

M. R. Smith (September 19): Argentine ants (Iridomyrmex humilis Mayr) were recently discovered at Northport.

M. R. Smith (September 19): A correspondent living in the country near Quitman complains of an unusual abundance of lion ants, Dorymyrmex pyramicus Roger, on the front porch of her house and in the yard. Mr. O. M. Chance reports Argentine ants from Yokena. The infested area is a rural one lying 2 miles southwest of the Glass station on the Y. & M. V. railroad. Mr. R. P. Colner recently found acrobatic ants infesting a kitchen at Moss Point, where preserves were being prepared. I have tentatively determined the ants as Cremastogaster ashmeadi Mayr.

State Plant Board (September 19): It is believed that the Argentine ant is now completely eradicated from Columbus over the largest area in the world in which this pest has been exterminated. A thorough scouting of the previously infested areas, block by block, this summer failed to reveal but two colonies of the ants, which were promptly destroyed by oil and fire.

About 76 city blocks were badly infested with the ants at one time. About 40 other places in Mississippi have eradicated the Argentine ant in cooperation with the State Plant Board, but the area cleared in Columbus is the largest.

C. Lyle and assistants (September): The Argentine ant situation in this vicinity is very encouraging at the present time, no Argentine ants having been found thus far at four of the previous infestations, namely, Grenada, Duckhill, Beatty, and Kilmichael. They have also been reduced to a very small area in the city of Water Valley, and only a few have been noticed in the cities of Winona and Tillatoba. The Argentine ant is very annoying to residents in places where no control campaign was conducted last year. In Brookhaven, where a campaign was conducted in March, 1929, these ants are numerous in only a few residences at this time. The size of the Argentine ant infestation is greatly increased at Rodney, owing to overflow of the river in 1927 and 1929. Fire ants (Solenopsis geminata Fab.) completely destroyed plantings of fall turnip greens in many gardens in George and Perry Counties. Ants completely destroyed a 5 acre field of beets sown late in August at Lucedale. Florida harvesting ants (Pogonomyrmex badius Latr., det. M. R. Smith) dug up the seeds, taking them to their nests; and Lion ants (D. pyramicus Roger, det. M. R. Smith) chewed off most of the plants that came up, leaving a bare field.

Texas

S. W. Clark (August 27): There was more damage than usual this summer at Weslaco by Solenopsis geminata Fab. attacking citrus. The indications are that the infestations will be particularly severe during the fall months.

#### CHEESE MITE (Tyroglyphus siro L.)

Washington

W. W. Baker (September 12-19): Two brands of small packages of cheese were found infested in two different stores at Puyallu all three packages had been wrapped in tin foil.

#### SILVERFISH (Lepisma saccharina L.)

Connecticut

N. Turner (September 1): Silverfish (species not identified) badly damaged paper newly applied on four rooms at Guilford.

Mississippi

C. Lyle and assistants (September): During the last week of August injury by the silverfish or slicker was observed in wall paper in Corinth. The room had recently been papered and the insects had eaten numerous holes in the paper, which marred the appearance of the room greatly. Silverfish are very abundant in residences at Natchez, feeding on wall paper and paste.

AN ANOBIID BEETLE (Xyletinus peltatus Harr.)

Mississippi

C. Lyle (September 22): Correspondents in various sections of the State have written us recently regarding injury to floors in their homes that we believe, from the descriptions given, was caused by Xyletinus peltatus.



PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from "News Letter" for August, 1931.  
(No.9, Issued September 1, 1931.)

Not for publication

GIPIY MOIH (Porthetria dispar L.)

There was less defoliation caused by the gipsy moth this summer than for several years, and the trees in most of the area were practically free from gipsy moth feeding. Defoliation was severe in the counties of Bristol, Plymouth, and Barnstable, Mass. There was recorded a total of 204,720 acres in New England which showed some feeding by the gipsy moth caterpillars, but over one-half of this was classified as less than 10 per cent defoliated, leaving 101,583 acres classified as from 10 to 100 per cent defoliated, and over one-half of this amount (54,710 acres) was in the southeastern section of Massachusetts. Practically all of the defoliation records are now available; there may be a few scattered ones received later, so that these figures may have to be changed somewhat, but it is not expected that any material change in them will be necessary.

In the part of the Barrier Zone in New York State which is cared for by the New York Conservation Department, scouting was carried on during July in the townships of Ancram, Austerlitz, Canaan, and Hillsdale, and apparently no infestations were discovered during the month. On Long Island the New York Conservation Department had 5 crews doing intensive scouting in North Hempstead Township. No indications of gipsy moth infestation were found as a result of this work.

JAFANESE BEETLE (Popillia japonica Newm.)

Flight of the adult Japanese beetle in the market and waterfront districts of Philadelphia reached such proportions that, beginning July 10, it was necessary to curtail the period during which farm products could be inspected and certified for movement from the generally infested area. Flight of the Japanese beetles in the heavily infested areas of New Jersey and Pennsylvania was studied during June by plant pest control officials from several other States. In a number of the localities visited, damage to crops was found to be greater than in preceding seasons. The beetle flight was still in progress at the end of August.

SMALLER BAMBOO SHOT-HOLE BORER (Dinoderus minutus Fab.)

A shipment of approximately 28 tons of Gynerium sagittatum, G. sacccharoides, and Arundo donax, imported at Philadelphia on July 28 for the purpose of testing machinery, was found to be very heavily infested, especially the Gynerium, with this bamboo borer.

SATIN MOTH (Stilpnotia salicis L.)

The satin moth has been found outside of the quarantine line in 8 towns in Connecticut; 2 towns in Massachusetts, one of which (Williamstown) borders the Vermont and New York State lines; 1 town in Vermont, and 9 towns in Maine. No infestation beyond the quarantine line in New Hampshire was found as a result of this work. This work is not entirely completed so that recommendations for changing the present quarantine line can not be made at this time.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Increase in infestation of the corn borer over most of the territory is indicated by a summary of the field reports on the egg survey in the western area, which was completed on July 22. This undertaking, commenced on June 25, was conducted by the Administration in cooperation with the Bureau of Entomology. Sections of New York, Ohio, and Michigan were covered by the 22 men employed, 20 of whom made the counts with 2 acting as supervisors.

LESSER BULB FLY (Eumerus strigatus Fallen)

An "active general field infestation" of the lesser bulb flies in Tennessee, where the capture of one specimen earlier in the season was reported in the July issue, is disclosed through field observations by G. W. R. Davidson. Several adult flies were observed in most of the plantings, and in the Victoria variety they were quite numerous. In one Georgia planting a number of larvae of the lesser bulb fly, some apparently full grown and others about half grown, were found in one variety of bulbs immediately after digging.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

During the month of July, field inspection in the Salt River Valley of Arizona consisted of making infestation counts from 23 selected fields, 20 of which are in Maricopa County and 3 in Pinal County. The results have all been negative. This is somewhat surprising when it is recalled that 2 of the fields selected in Pinal County and 9 in Maricopa County were infested last season. Also 2 of the fields in Maricopa County were found to be infested this season prior to the beginning of the infestation counts. This would seem to indicate that the infestation is still very light. One of the most logical conclusions for not finding specimens, especially in the 2 fields where they were found earlier in the season, is that the bolls are now developing much more rapidly than the infestation.

An infestation count consists of the inspection of 100 bolls. Estimates were made recently to determine the number of bolls per acre, which was found to be 919,080. In examining 100 bolls from this number, it can be readily seen that the chances of finding specimens are very slight, except where the infestation is heavy.

Field inspections have also been made in the Tucson area. By using 10 squares or green bolls per acre, 1,225 acres have already been inspected



with negative results. Practically all of the cotton acreage in the district will be covered by this method of inspection in another month.

One of the new gin trash machines mounted on a truck was sent to the Lower Rio Grande Valley of Texas on July 24. Other machines were sent out as they were completed, so that by the end of July there were five machines operating in the above area. These machines inspected 265½ bushels of trash from 25 gins with negative results.

#### MEXICAN FRUIT FLY (Anastrepha ludens Loew)

As a supplement to the inspection work this summer, 1,077 fly traps similar to those <sup>used</sup> in Florida were placed in 118 selected groves during the first part of July. The use of these traps resulted in the taking of one adult Anastrepha (not ludens), July 14, in a grove one mile south of Mission, Tex. Additional traps placed in this and the surrounding groves gave negative results the remainder of the month.

Adult flies continue to be taken in the traps in Matamoros. During the month 176 traps were maintained in 57 different premises scattered throughout the city. The use of these traps resulted in the taking of 30 adult flies on 13 different premises. Of interest in this connection is the fact that in only 4 of these premises were reinfestations found. All trees within an area of four blocks around each point of infestation were sprayed at weekly intervals with poison-bait spray.

#### OUTSTANDING ENTOMOLOGICAL FEATURES IN MEXICO, SUMMER OF 1931.

Alfonso Dampf, Head of Department of Research

Oficina Federal para la Defensa Agricola, San Jacinto, D. F. (Mexico)

The extraordinarily heavy rains which fell in June and July in Mexico had very interesting effects on insect pests. There was an unprecedented outbreak of cutworms, not only in the central highland but also in the tropical parts. Reports were received from the States of San Luis Potosi, Michoacan, Hidalgo, Mexico, Puebla, Guanajuato, Morelos, Veracruz, Guerrero, Oaxaca and Chiapas. The species most destructive to alfalfa proved to be Copitarsia consueta Wlk., a noctuid known as a potato pest, a borer of cabbage heads, and an enemy of tobacco plants. (Dampf det.)

Another surprise was the appearance of the chinch bug, Blissus leucopterus Say, in the Ixtlahuaca Valley, State of Mexico, 400 meters above sea level, as a serious pest of corn, the first case since the establishment of an organized plant protection service in Mexico. Corn planted in June was without exception badly attacked; fields planted in April looked healthy. The pest came from the winter-wheat fields and is apparently at home in the tussocks of alpine grass in the nearby hills and mountains. H. G. Barber, U. S. Bureau of Entomology, identified



the specimens as unmistakably chinch bugs, but much darker than the United States variety.

A false chinch bug (apparently Nysius sp.), influenced by the same meteorological conditions as Blissus leucopterus Say, appeared in alarming number in the cornfields in the State of Hidalgo.

In the State National Park Desierto de Los Leones, Federal District near Mexico City, Lachnus sp. was extremely abundant during May, attacking young trees of Abies religiosa. The stems were in some cases covered with a crust of aphids for a span of two meters.

Halisidota caryae Harr. defoliated many rose bushes in and around Mexico City during August. In some cases corn was attacked and small plantations in gardens were entirely destroyed.

During a visit to the West Coast of Mexico, in the month of June, the joint commission composed of Mr. Trotman and Mr. Townsend from the Plant Quarantine and Control Administration, U. S. Department of Agriculture, Washington, and Mr. I. Hernandez Olmedo from the Oficina Federal para la Defensa Agricola, Mexico Secretaria de Agricultura, located the following infestations of fruits by larvae of the genus Anastrepha:

- In guayaba (Psidium) in Mazatlan, State of Sinaloa,  
probably Anastrepha striata Schin.
- In Mexican plums (Spondias), in Mazatlan, Sinaloa,  
probably A. fratercula Wied.
- In sour oranges, Tepic, Nayarit, probably A. ludens Loew.
- In Caimito (Chrysophyllum cainito), El Dorado, Sinaloa;  
one adult obtained proved to be A. serpentina Wied.

This extends the known infested zone considerably to the northwest.

On their return trip, the U. S. commission was accompanied by Mr. E. Coppel Rivas and additional investigations were made, with the result that fruit fly larvae probably A. striata were also found in Culiacan, Sinaloa, in guayabas.

INSECT CONDITIONS IN PORTO RICO DURING AUGUST, 1931

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico

The yellow cane aphid, Siphia flava Forbes, was observed doing considerable damage in a number of large sugarcane plantings of young to fairly large cane near both Aguirre and Santa Isabel on August 22. Mr. Foss, Assistant Field Manager of the Aguirre Sugar Co., stated on that date that during all of July and August there had been a rather general, though fairly light, infestation throughout nearly all of the company's extensive plantings, in spite of the fact that the rainfall had been greatly in excess of normal.

A leafhopper, Protalebra brasiliensis De Long, known to be a minor pest of sugarcane, continued to be common in all stages throughout the month on many patches of Bidens pilosa at El Morro in San Juan.

Adults of the scaraboid beetle Dyscinetus barbatus Fab., an occasional minor enemy of sugarcane, were observed in small numbers at lights at Peto Rey on August 31. (M.D.L.) At Isabela adults were not observed at lights throughout the month and had not been seen at lights since June 8. (G.N. Wolcott.)

Scattering male adults of Phyllorhiza vandinei Stryth were collected on sugarcane on August 11 and 12 at Isabela but even by the end of the month they were not common there. (G.N.W.)

The attacks of the cotton leaf worm, Alabama argillacea Hbn., naturally abated throughout the North Coast during the month, due largely to the fact that most of the cotton plants were old and no longer succulent. According to F. E. Rourke of the San Juan Ginnery Co. at least 80 to 85 per cent of the crop had been picked by the end of the month. Around Manati, however, the insect was active until at least the middle of August and apparently in several other localities there was a certain amount of feeding.

The pink boll worm, Pectinophora gossypiella Saund., was generally infesting the whole North Coast cotton growing section during the month, according to F. E. Rourke, the infestation being worst, however, in the vicinity of Arecibo, Hatillo, in parts of Camuy, and in Aguadilla. The infestation in a number of fields in these places ran as high as 100 per cent. At Moleza, near Aguadilla, a fair sized patch was examined on August 4th which showed 100 per cent of the bolls infested after only one picking; a single boll picked at random showed 7 exit holes. At Isabela the infestation was somewhat lighter. It is estimated that there has been about 50 per cent loss of the crop this season in the entire North Coast region, due to excessive rainfall, the pink boll worm and the cotton leaf worm. It is difficult to say how much of this is directly chargeable to

the pink boll worm, but probably at least half the loss should be attributed to it. As a whole the loss has not been so great on the North Coast as on the South Coast, but in certain northern localities it was as bad as in the worst infestations on the South Coast.

A cotton stainer, Dysdercus andreae L., was not abundant during the month and apparently did no appreciable damage. (F.E.R.)

The melon worm, Dianthia hyalinata L., was generally present and troublesome to cucumbers at the station at Rio Piedras during the month necessitating spraying almost every other day to keep the pest in check.

The melon aphid, Aphis gossypii Glov., was troublesome to cucumbers at the station at Rio Piedras throughout the month but was satisfactorily held in check by frequent spraying. This insect was generally present but not serious on a patch of okra at the station at Rio Piedras during the month.

A lima bean pod borer, Maruca testulalis Geyer, was observed doing considerable damage to the patch of pole limas at the Rio Piedras Station on August 18 by the larvae eating into the blossom buds, which were then abundant, and feeding on the ovaries (F. Seib.). Search at the end of the month, however, showed very few blossoms present and only one dead half-grown larva. (M.D.L.) Ninety pods examined at the Isabela Substation showed no infestation. (G.N.T.)

The lima bean pod borer Etiella zinckenella Treit. was not present in 90 lima bean pods examined at the substation at Isabela. (G.N.T.)

The bean leaf roller, Goniurus proteus L., was moderately abundant on pole limas at the station at Rio Piedras, P. R.

The bean leaf webber, Mecynotus indicata Fab., was fairly abundant on pole limas during the month at the station at Rio Piedras but possibly not quite so abundant as during July.

A leaf beetle, Diabrotica graminea Baly, caused considerable damage to lima beans at the station, especially to the blossoms, but also some leaves. This beetle and Maruca and the lacebug combined prevented pod formation entirely, although other factors were undoubtedly responsible for the nonformation of pods, possibly too hot weather.

A bean leafhopper, Emmonsa fabalis De Loar, was fairly abundant on lima beans at the station at Rio Piedras during the month.

A leaf bug, probably Hyaliodes sp., according to Dr. H. H. Knight, was observed generally distributed at the end of the month in moderate numbers on the underside of the leaves of the pole lima beans and the okra, which grow on adjoining patches; both are about 25 or 30 yards away from the Arroz diversifolia trees upon which the insect feeds; no nymphs could be found on either the beans or okra.



The cotton leafbug, Corythucha gossypii Fab., was very destructive at the Rio Piedras Station on pole lines, increasing in abundance so that by the end of the month many leaves were brownish and dry, the insects being present in all stages in great numbers.

The Scarabee, Euscerus batatas Waterh., was found lightly infesting one sweetpotato tuber in the public market at Puerto de Tierra, San Juan, (R. Faxon and R.G. Oakley.)

A small blackish flea beetle was very common in all the sweetpotato patches examined and apparently doing some damage. This looks like Chaetocnema annularia Suffrian, and I would say definitely it is that species, for it is our sweetpotato flea beetle in Porto Rico, except that Long and Metchler do not record it from Antigua--only from Porto Rico and Cuba, and in the Supplement they add Jamaica and Haiti.

An adult of the bug Spartocera batatas Fab. was found attacking sweetpotatoes in the patio of the main building at the station at Rio Piedras on August 18 and later in the month several adults were observed on the walk outside the same building.

A leaf miner, Agromyza ipomeae Frost, was present throughout the month as usual in moderate numbers in several sweetpotato patches observed.

The cotton leafbug, Corythucha gossypii Fab., was found towards the end of the month in small numbers on the okra at the Rio Piedras Station. The okra adjoins the pole lines on which the insects were breeding very abundantly. Only adults could be found on the okra, but these were feeding to a noticeable extent, causing the characteristic yellowish stippled areas on the leaves.

A leaf beetle, Diabrotica graminea Baly, did considerable damage to leaves and blossoms on the okra patch at the Rio Piedras Station.

A whitefly, undoubtedly Aleurotrachelus tracheoides Back, was found on August 17 to be badly infesting a house pepper plant in Santurce.

The red-banded thrips, Heliothrips rubrocinctus Giard, was observed doing considerable to moderate damage to the foliage of about 1,000 nursery mango trees at the station at Rio Piedras. Thorough spraying at once almost eliminated the insects, but by the end of the month they were again beginning to get a good foothold.

The papaya fruit fly, Toxotrypana curvicauda Gerst., was found to be infesting the fruits of a number of papaya plants on a farm near Ponce on August 5. One fruit, small and green and about 2-1/2 inches long, contained 20 larvae, and another, somewhat more mature and about 5 or 6 inches long, contained 24 larvae; in both fruits the maggots were nearly too fully grown. The owner stated that during May and June nearly all of the fruits on his trees was infested, many so badly that they had to be thrown away.

The white peach scale, Aulacaspis pentagona Targ., was moderately abundant on papaya trees on a farm near Ponce on August 5. Several "pesquin" trees (Albizzia mollis) at the Rio Piedras Station, used as shade trees in an experimental coffee planting, were moderately infested with this scale.

Adults of Diaprepes spengleri L. were present in fair numbers (but fewer than on the same trees last June) on several trees of a Ficus (probably F. laevigata) near Santa Isabel on August 20-22. Thirty-five egg masses were collected during several hours of careful search in an effort to obtain Trichogrammid egg parasites for introduction into Barbados. The percentage of parasitism could not be determined at the time.

A leaf tyer, Dichomeris nigratus Wism., was found to be rather badly infesting a small experimental patch of alfalfa at Maleza in the municipality of Aguadilla on August 4. This is in a rather isolated section containing many hat palms, and little farming has been done there; this occurrence of the insect in injurious numbers at some considerable distance from the only other nearest alfalfa grown at the Isabela Substation again raises the question as to what the natural leguminous food plant of the insect really is.

An undetermined scale was brought in on August 8 by Dr. T. Bregger, who stated that several "bucare enano" trees (Erythrina berteriana) were somewhat infested in the experimental coffee plots at the station. On the same date Dr. Bregger found an undetermined scale which was rather badly infesting several "pesquin" trees (Albizzia mollis) used as shade trees in an experimental coffee planting at the Rio Piedras Station.

The Hawaiian beet webworm, Hymenia fascialis Cram., was much less abundant than during July at El Morro in San Juan. The scarcity of the moths and larvae was undoubtedly due to the destruction of most of the patches of the weed "arraza contodo" (Gomphrena dispersa) on which the insect has been feeding there.

\*Correction: The note on Empoasca fabae Herr. on page 494, by M. D. Leonard, should be corrected to E. fabalis DeLong.

#### INSECT CONDITIONS IN ANTIGUA, AUGUST 25-29, 1931

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico

The sugarcane borer, Diatraea saccharalis Fab., is generally distributed and does considerable injury to sugarcane.

A number of adults of Ligys tumulosus Burm. were observed caught in the webs of a large spider in a considerable sized swampy area. The webs were common and were spun between the tops of the grasses. The

spiders extracted the juices from the beetles after they had been caught and securely wound about with silk.

Mealy bugs, Pseudococcus sp., were observed and are generally distributed on sugarcane but are of minor importance.

The sugarcane looper, Renifia (Mocis) repanda Fab., has been abundant and generally distributed during the year, feeding both on sugarcane and several grasses, especially Panicum maximum. (Harold E. Box.) A caterpillar was observed on August 28 feeding on guinea grass on the summit of Boggy Peak, the highest point on the island, 1360 feet.

Many coconut trees were observed the leaves of which had turned yellowish or brownish. Upon closer observation these were found to be badly infested with Aspidiotus destructor Sign.

The mango thrips, Heliethrips rubrocinctus Giard, was very scarce to absent on a number of mango trees examined in several parts of the island. This scarcity may be due to excessive rainfall during and previous to my visit.

The banana root weevil, Cosmopolites sordidus Germ., was apparently not present in banana plants observed in several localities. I believe it has not yet been recorded from Antigua.

Red spiders, Tetranychus sp., were almost entirely absent on several different patches of cassava examined.

Grasshoppers (Locustidae) were doing some damage to the leaves of cassava.

The pink boll worm, Pectinophora gossypiella Saund., badly damaged the 1928 cotton crops. The hurricane in the fall, however, destroyed all the young plants which were growing, and the crop of 1930 was free from the pest. This past season's crop, however, was lightly infested towards the end. The crop following the 1928 hurricane in Montserrat, it is interesting to note, was apparently damaged, according to Mr. Warnford, as badly by pink boll worm as those crops preceding it.

The cotton leaf worm, Alabama argillacea Hbn., was scarce on cotton during the past year.

A cotton stainer, Disdercus andreae L., was generally present on cotton but only of minor importance.

The cotton blister mite, Eriophyes gossypii Glov., was scarce as usual and did little damage.

A leaf beetle, Homophacta acuinotialis Fab., was swept from sweet-potatoes in small nurseries and also observed in other plants, but the extent of the feeding of the adults, if any, was not determined.



A tortoise beetle, Contocycla sp., was swept in small numbers from several sweetpotato patches and was undoubtedly doing some feeding.

A leafhopper, possibly Dreosaca fabalis De Long, was generally distributed although not abundant throughout the island.

An undetermined virid was observed in the adult (black) and several nymphal stages (pale colored) in a considerable sized patch of sweet-potatoes not far from St. Johns. The feeding punctures made on the underside of the leaves caused small dark spots, but apparently little injury was being done.

A dipterous leaf miner, undoubtedly Agromyza ipomeae Frost, was not numerous, but the mines were observed in every sweetpotato patch examined in several different parts of the island.

The eggplant lacebug, Corythaea monacha Stal., was not observed on several egg plants examined but it was present in small to large numbers on its natural wild foot plant, Solanum torvum, in several parts of the island.

The tobacco flea beetle, Exitrix parvula Fab., was fairly common and injurious in several small patches of eggplant examined.

The melon worm, Diaphania hyalinata L., was found badly damaging a small patch of only a few vines of squash.

A small black squash bug, Pycnodorcas incurvus Distant, was common on the squash vines and doing a little damage. The nymphs were present in all stages, being pale in color.

A large grasshopper, probably Schistocerca sp., was common in all parts and doing more or less feeding on various plants.

The yellow-striped armyworm, Prodenia ornithogalli Guen., has been very common on many different kinds of plants during the past few months. (I.E.Box.)

A number of plants at the Botanic Gardens were considerably infected by the larger canna leaf roller, Calpodex ethlius Cram.

An undetermined lepidopterous leaf skeletonizer was very abundant on a hedge of black bead (Pithecolobium unguis-cati) at the Botanic Gardens in St. Johns. A great many leaves were either tied together or folded and were so badly eaten that the entire hedge had a yellowish appearance.

A lepidopterous leaf skeletonizer, probably Sylanta gordialis Guen., was doing considerable damage to a number of plants of Bougainvillea glabra in the Botanic Gardens.



# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

November 1, 1931.

Number 9

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





# INSECT PEST SURVEY BULLETIN

Vol. 11

November 1, 1931

No. 9

## OUTSTANDING ENTOMOLOGICAL FEATURES IN THE UNITED STATES FOR OCTOBER, 1931

Despite the very late appearance of the cotton leaf worm in the Gulf Region, the moths of this insect did some damage to fruit in central Missouri and southeastern Nebraska. The only other records we have of flights of the moths into the North was a report from Michigan that a single specimen was collected on October 21 at Shelby.

The plains false wireworm is doing considerable damage to the newly planted wheat in western Kansas.

The Asiatic beetle severely damaged lawns at points in Connecticut and New York.

Soil surveys made during September indicate that the Japanese beetle infestation is definitely heavier than it was this spring in the Moorestown district in New Jersey, and in the Jenkintown district in Pennsylvania. These surveys further indicate that this insect is generally distributed as far northward as Plainfield and Metuchen, N.J., with localized colonies beyond this region.

Grubs of the scarabaeid Ochrosidea villosa Burn. were reported as having very seriously damaged the turf on the fairways of a country club at Bayside, and lawns at Lawrence and Woodmere in New York. We also have a report of a lawn being ruined by this insect in the suburbs of Washington, D. C.

In the East Central States an unusually heavy emergence of the Hessian fly occurred in September. In most places, however, this was too early to infest the wheat sown after the fly-free date. Volunteer wheat, though scarce, is heavily infested.

The corn ear worm persisted extremely late in the Northern States. In Maine this insect was more numerous than has been observed in the past ten years, and similar reports of unprecedented infestations occurred as far west as Wisconsin, Minnesota, South Dakota, and Iowa. It not only damaged late sweet corn but also ate the mature field corn and did very considerable damage by entering greenhouses, where the larvae attacked practically all forcing plants.

The chinch bug maintained a population in the East Central States of such proportions that the number of bugs going into hibernation is distinctly alarming. This insect has also been reported from east-central Pennsylvania.

The fall armyworm was reported during the last few days in September from the lower Gulf region in Louisiana, where it was damaging soybeans and sugarcane. This insect was also reported as a pest to flowers growing under glass in Michigan.

At harvest time side-sting injury by the codling moth was observed to be unusually prevalent throughout New England and the Middle Atlantic States. Similar injury extended across the lake region into Minnesota and Iowa.

Apple leafhoppers were so prevalent at harvest time in the orchards of New England, the Middle Atlantic States southward to Virginia, and the East Central States westward to Illinois and Kentucky, that these insects, in addition to specking the fruit, were a very decided nuisance to the pickers.

The citrus whitefly was reported as quite generally abundant from Georgia and Florida to Mississippi.

Along the Atlantic seaboard, from Virginia southward to South Carolina and Alabama, the cabbage webworm has been doing very appreciable damage to cruciferous crops. This insect is also occurring in damaging numbers on cauliflower in southern California.

The pickle worm, during late fall, appeared in the Middle Atlantic and New England States in greater numbers than it has in many years. The first record of this insect as a pest in Connecticut was made this year. The insect was so numerous that practically no squash was harvested in the Charleston section of South Carolina, and many fields of late cucumbers were completely ruined in north-central Florida.

The cabbage looper is reported as damaging spinach in Ohio and Pennsylvania.

The birch skeletonizer is heavily defoliating birch in Maine, New Hampshire, and northeastern New York. This insect has also been reported from Wisconsin and Minnesota. The birch leaf-mining sawfly is also seriously infesting birch from Maine to northern New York.



The boxelder bug is very unusually prevalent in Virginia, Maryland, and Delaware. This insect is also reported as very prevalent in the East Central States, West Central States, Utah, and Washington.

Damage to azaleas and rhododendrons by white grubs is becoming increasingly prevalent in southern Alabama where these plants are used very extensively as ornamentals.

The European thrips Taeniothrips atratus montanus Priesner is recorded for the first time in the United States. It was found this summer on gladiolus at Longmeadow, Mass.

•

## GENERAL FEEDERS

### GRASSHOPPERS (Acrididae)

- Florida      F. S. Chamberlin (October 8): Grasshoppers, mainly Melanoplus sp., are more abundant than usual in Gadsden County for this season of the year.
- J. R. Watson (October 25): Grasshoppers are moderately abundant and are doing considerable damage to young citrus trees in the northern and central parts of Florida.
- Indiana      J. J. Davis (October 24): Grasshoppers were reported abundant and destructive in tomato fields at Sulphur Springs, Henry County, October 7.
- Illinois      W. P. Flint (October 24): While grasshoppers were only slightly more abundant than usual in the State this year, they have had ideal conditions for egg laying during the fall and we anticipate serious damage next year.
- Tennessee    C. Benton (September): Grasshoppers are locally abundant near Fayetteville but no commercial damage has been reported, largely owing to the fact that on account of drought the usual September plantings of small grain and legumes were not made. Much volunteer wheat has been eaten up by them.
- Wisconsin    E. L. Chambers (October 27): Grasshoppers are moderately abundant but still quite numerous in certain sections.
- Minnesota    A. G. Ruggles (September 26): Grasshoppers are gradually dying off, but egg laying continues by those left, on sides of roads, ditch banks and edges of fields, and parts of pastures are filled with eggs in the infested area of the Red River Valley. Adults are still numerous enough around Stephen to eat off several acres of fall rye down below the surface of the ground. We can not see what will prevent a big outbreak in 1932.
- Oklahoma     C. F. Stiles (October 28): Most of the grasshoppers have laid their eggs and disappeared from Oklahoma. With favorable weather for development of grasshoppers, we may expect a serious outbreak in central and southwestern Oklahoma next year.
- South Dakota   H. C. Severin (October): We have not had a killing frost as yet, and surviving grasshoppers are still laying eggs. The species surviving in largest numbers are M. differentialis Thos. M. mexicanus mexicanus Sauss., and M. femur-rubrum DeG. M. bivittatus Say is an earlier species, and while it was the most harmful of the four mentioned, it began to die off late in August, and only a few survive at present. An immense number of eggs are found in the ground in the areas that were badly

damaged this year, while in much of the remainder of the State the eggs are sufficiently abundant to cause alarm. If weather conditions will favor the grasshoppers this winter and next spring, the damaged area in South Dakota promises to be much increased.

Iowa H. E. Jaques (October 25): Grasshoppers have been moderately abundant in many parts of the State. Many may still be found. Late garden crops and other vegetation has suffered from them.

Missouri L. Haseman (October 22): The red-legged and differential grasshoppers have continued in goodly numbers, ovipositing up to the middle of October.

Kansas H. R. Bryson (October 24): Grasshoppers are moderately abundant in most sections of the State. Practically no damage has been reported during the past month.

Nebraska M. H. Swenk (October 24): Grasshoppers have largely disappeared now, having laid eggs.

Mississippi C. Lyle and assistants (October): The only report of grasshopper damage during October was to soybeans at Cruger. (Abstract, J.A.H.)

#### COTTON LEAF WORM (Alabama argillacea Hbn.)

Michigan R. H. Pettit (October 24): A single specimen was taken on or about October 21 at Shelby. This constitutes the sole record for this year up to the present time in Michigan.

Missouri L. Haseman (October 22): Cotton leaf worm moths have continued abundant and injurious to fruit at Columbia all this month.

Nebraska M. H. Swenk (October 26): A small flight of moths reached Nebraska during the first week in October, and were complained of at that time as damaging ripe peaches in Cass County.

Mississippi C. Lyle and assistants (October): The cotton leaf worm is unusually scarce throughout the State this year, the infestations being so light that no control measures were found necessary. (Abstract, J.A.H.)

#### WHITE GRUBS (Phyllophaga spp.)

West Virginia L. M. Peairs (October 24): White grubs are very abundant in lawns at Parkersburg.

Ohio T. H. Parks (October 24): Several complaints reached this office during September of white grub injury occurring to lawns in Columbus.



- Minnesota A. A. Granovsky (September 27): White grubs are very abundant. A few lawns in Minneapolis are badly infested with Brood B larvae.
- Missouri L. Haseman (October 22): White grubs are reported at Columbia. Still abundant in first 6 inches of surface soil.
- Nebraska M. H. Swenk (October 26): White grubs continued to be observed actively feeding until about October 23.

#### WIREWORMS (Elateridae)

- Pennsylvania C. A. Thomas (October 20): Wireworms caused considerable injury to potato tubers on several farms in Pennsylvania this summer, reports coming from Erie, Crawford, Huntingdon, Lycoming, Chester, and Bucks Counties. In southeastern Pennsylvania the chief injury was by larvae of Phaeletes agonus Say while in Erie County a Melanotus larva was the chief offender.
- Indiana J. J. Davis (October 24): Wireworms were serious pests of potatoes in several localities near Evansville according to report sent October 17.
- Mississippi State Plant Board (October 26): Wireworm injury to sweet-potato tubers has been reported during October as rather serious in Jackson, Monroe, Lauderdale, Rankin, Copiah, and Bolivar Counties.
- Oklahoma C. F. Stiles (October 28): Wireworms are damaging some fields of wheat in Alfalfa County.
- California E. O. Essig (September 28): Wireworms are moderately abundant

#### PLAINS FALSE WIREWORM (Eleodes opaca Say)

- Kansas H. R. Bryson (October 24): The false wireworm has been doing considerable damage in the western part of the State. Owing to the dry summer and an extended dry fall, the larvae have had the advantage of a long feeding period. Wheat sown in September has not had sufficient moisture to insure its germination, hence much damage has been done. A few reports of 100 per cent damage in some fields have been received. Reports in correspondence have been received from Copeland, Delphor, Johnson, Healy, and Hoxie, Kans. At the time of this writing no temperatures sufficiently low to force the larvae down into the soil for the winter have occurred.

#### ASIAN GARDEN BEETLE (Aserica castanea Arrow)

- New York and Pennsylvania C. H. Heller and assistants (U.S.D.A., Japanese Beetle Laboratory) (September): This beetle has caused more turf injury during the fall than during any previous year since the investigation was started in 1927. This injury occurs on the lawns in the northern

half of Nassau County on Long Island. Although adults are still to be found in the field, they are scarce.

During the month a total of 139 soil surveys of one square foot each were made at Chestnut Hill, Pa. An average of 8 grubs to the square foot was found with a range of 0 to 93.

ASIATIC BEETLE (Anomala orientalis Waterh.)

Connecticut

R. B. Friend (October 24): Several lawns in the Westville section showed severe injury this month, but in the center of the infested area the insect is less abundant. A severe infestation appeared this year about  $1\frac{1}{2}$  miles outside the quarantined area. The insect is not spreading rapidly.

New York

C. E. Hadley and assistants (U.S.D.A. Japanese Beetle Laboratory) (September): The turf injury at Jericho, reported in August has spread so that it now covers about three-fourths of an acre. The grubs have also attacked a strawberry bed (approximately 2,000 square feet in size) at the same place and destroyed 60 per cent of the plants.

JAPANESE BEETLE (Popillia japonica Newm.)

New Jersey  
and  
Pennsylvania

C. H. Hadley and assistants (U.S.D.A., Japanese Beetle Laboratory) (September): Comprehensive soil surveys made in golf courses at Moorestown, N. J., and Jenkintown, Pa., show that the grub infestation is definitely heavier than it was this past spring. Field work on the distribution of the adult Japanese beetle was continued during the first week of September, during which time the region extending from New Brunswick north to Hackensack, Paterson, and Newark was scouted. The results obtained indicated the extension northward of the region of continuous occurrence as far as Plainfield and Metuchen, and beyond these points, the presence of usually highly localized colonies of the beetle in many of the cities and towns occupying the belt of low country east of the Watchung Mountains.

A SCARABAEID BEETLE (Ochrosidia villosa Burm.)

New York

C. H. Hadley and assistants (U.S.D.A., Japanese Beetle Laboratory) (September): Ochrosidia villosa: In the fairways of a golf club at Bayside, N. Y., approximately 1 acre of turf was destroyed. The ruined turf was in irregular spots which were widely separated in different parts of the course. At Lawrence, N.Y., one-fourth of an acre of lawn turf was entirely destroyed so that dead brown sod could be easily rolled back. At Woodmere, N.Y., 300 square feet of lawn was ruined.

Maryland

F. L. Campbell (October 1): Toward the end of September this insect was observed in very great abundance in the Rock Creek Park section of Washington, D. C., where it had completely destroyed a recently sodded lawn.

COMMON RED SPIDER (Tetranychus telarius L.)

Ohio

E. W. Mendenhall (October 21): The red spider mites are very bad on arborvitae evergreens in a nursery near New Carlisle. Evergreens in one of the nurseries in Ashland are badly infested.

Minnesota

A. G. Ruggles (September 26): Red spiders are very abundant on raspberries, zinnias, apples, etc., throughout the State.

Utah

G. F. Knowlton (October 13): Red spiders are still damaging sugar beets in many Cache Valley fields.

Washington

M. A. Yothers (October): During the season the common red spider has been the most abundant and injurious the orchardists can recall in the Wenatchee district. It has been particularly injurious to the Delicious apple trees (foliage and fruit). The unusually mild winter of 1929-30, the early spring, and the mild, dry summer were doubtless conducive to maximum development of this pest.

In migrating to the soil in late summer and early fall countless numbers of the mites were caught and killed in the chemically-treated codling moth bands and in tree tanglefoot bands placed about the tree trunks.



CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

- Ohio T. H. Parks (October 25): Nearly all eggs were hatched by October 25 and the newly emerged larvae were found attached to the stalk under the leaf-sheath. Infestation exists at Columbus in wheat sown immediately after the recognized fly-free date. October was warm and late-sown wheat is getting a good start. The majority of the fields are free from infestation. In this part of Ohio practically no wheat was sown before the safe sowing dates.
- Indiana C. M. Packard (October 5): Volunteer wheat from Logansport to Evansville has 50 to 75 per cent of the stems infested. The fly is largely in the flaxseed stage, with about 15 per cent pupating. A few eggs and some newly hatched larvae are present. Volunteer wheat is not very abundant. Not much sown wheat was above ground by the last of September.
- Illinois W. P. Flint (October 24): An unusually heavy emergence occurred late in September. In many of the counties lightly infested at the time of stubble survey, the fly is now numerous enough to lay large numbers of eggs on volunteer and early-sown wheat. From the information at hand, wheat sown on the recommended fly-free dates has escaped any serious infestation.
- J. H. Bigger (October 13): Adults were numerous the last week in September extending to about October 7 and 8. Examinations on October 9 and 10 show:
- Four fields seeded before October 2---60.4 per cent  
with eggs  
Two fields seeded after October 7---7.5 per cent  
with eggs  
Recommended date of seeding in this(Morgan)County  
October 2
- Michigan R. Hutson (October 23): The Hessian fly is moderately abundant.
- Iowa H. E. Jaques (October 25): The Hessian fly is moderately abundant in Monroe County.
- Missouri L. Haseman (October 22): Very little Hessian fly in experimental plats at Columbia; no complaints from farmers.

Tennessee C. Benton (September 28): There is a light infestation in volunteer wheat in the vicinity of Fayetteville. Mostly in puparial stage, but a few eggs and newly hatched larvae. Slight pupation in both stubble and volunteer grain. Hot, dry weather has prevented most of the usual sowing of small grains for fall and winter pasture.

Nebraska M. H. Swenk (September): The summers and falls of 1930 and 1931 were so hot and dry in eastern Nebraska that the Hessian fly was affected adversely, and in September, 1931, no special menace of an outbreak seemed to be present. Evidences of the fly in moderate amounts were reported from Nemaha, Otoe, Colfax, and Dawson Counties during the month.

WHEAT JOINT WORM (Harmolita tritici Fitch)

Missouri L. Haseman (October 22): The joint worm of wheat was reported from Polk County.

CORN

CORN EAR WORM (Heliothis obsoleta Fab.)

Maine C. R. Phipps (October 26): The corn ear worm is very abundant throughout the State. The largest number for 10 years have been sent in.

New Hampshire L. C. Glover (October 23): The corn ear worm is moderately abundant.

Massachusetts A. I. Bourne (October 26): The corn ear worm was, as usual, quite abundant on late harvested corn. The unusual interest in this species can be explained partly on the basis of the interest in corn insects of all sorts by the extension of the European corn borer quarantine, which caused growers to scrutinize their corn more carefully than would otherwise have been the case. At the same time, however, from our own observation we were led to believe that there was rather more injury from this species than is usually the case.

Connecticut W. E. Britton (October 24): The corn ear worm is abundant in all portions of the State.

Rhode Island A. E. Stene (October 21): The corn ear worm is moderately abundant.

New York P. J. Parrott (October 23): The corn ear worm is moderately abundant in the western part of the State.

P. M. Eastman (October 14): The corn ear worm has been reported as doing considerable damage in plats of sweet corn in the vicinity of Millbrook and Stockport.

Pennsylvania, T. L. Guyton (October 22): The corn ear worm is moderately abundant and general over the eastern part of Pennsylvania.

West Virginia L. M. Peairs (October 24): Corn ear worms are very abundant at Morgantown. Much injury up to harvest.

F. W. Craig (October 5): Corn ear worms were very bad in Mason County.

Virginia H. G. Walker (October 27): The corn ear worm is very abundant on snapbeans in Norfolk.

Florida J. R. Watson (October 25): The corn ear worm is moderately abundant and is feeding mostly on seeds of beggarweed.

Indiana J. J. Davis (October 24): Corn ear worms have been unusually abundant. From Mt. Vernon, September 28, report comes that this insect ruined all of the late sweet corn. Similar reports could be given for many other sections of the State. October 17 to 20, reports were received from Monticello, Rensselaer, LaPorte, and Lafayette, of large numbers of earworms in alfalfa fields, and apparently causing appreciable damage. Ear worms were reported abundant and destructive in tomato fields at Sulphur Springs, Henry County, October 7.

Illinois W. P. Flint (October 24): A heavy flight of adults has continued. Several reports of damage to alfalfa (newly sown) have been received.

J. H. Bigger (September 15): Corn ear worms are very abundant in central and west-central Illinois. From 30 to 35 per cent of the ears in six central counties are infested.

Kentucky W. A. Price (October 24): The corn ear worms are still feeding on corn that is ready to go into the crib. They are tunneling the kernels, feeding on the germ. Much damage is caused by the activity as all kernels so eaten fall off the cob and are a total loss. Also the worms continue to be troublesome in dahlias at Lancaster, Lexington, and Owensboro.

Michigan R. Hutson (October 23): The corn ear worm is very abundant; there are large numbers of moths.



- Wisconsin E. L. Chambers (October 26): One of the heaviest infestations for many years appeared in Wisconsin this summer, continuing to be active very late owing to no killing frost to date. Several fields of pop corn and sweet corn showed 100 per cent infestation. Several rose houses and one chrysanthemum house were heavily infested in Milwaukee County.
- South Dakota H. L. Severin (October 20): The corn ear worm was very abundant this year. Corn was largely a failure over South Dakota and almost everywhere the ear worm was reported as abundant in the corn produced.
- Iowa H. E. Jaques (October 25): The corn ear worm has been the outstanding insect pest during October. It has been unusually abundant throughout most of the State.
- Missouri L. Haseman (October 22): The corn ear worm has continued very abundant and is still feeding in late corn, tomatoes, and beans, and on foliage of plants.
- Kansas H. R. Bryson (October 24): The corn ear worm is moderately abundant.
- Mississippi C. Lyle and assistants (October): Rather severe damage to late tomatoes was reported from central and northern Mississippi. (Abstract, J.A.H.)
- California S. Lockwood (October 5): The corn ear worm has been more than normally abundant this fall. The trouble has extended as far north as Monterey County, where the worm has attacked lettuce and tomatoes. It has also been injurious to tomatoes in Contra Costa County.

SOUTHERN CORN STALK BORER (Diatraea zeacolella Dyar)

- Virginia C. R. Willey (October 23): Specimens were sent in from King and Queen County. (September 28) There are reports that about 3 acres of a 20-acre field were destroyed by this pest.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

- Connecticut W. E. Britton (October 24): A recent survey shows a rather heavy infestation of stalks in East Lyme, Groton, New London, and Old Lyme, with lesser infestations throughout New London, Windham, and Middlesex, and portions of Hartford and New Haven Counties. The survey did not cover the other portions of the State.

- Rhode Island      A. E. Stone (October 21): The European corn borer is moderately abundant.
- Pennsylvania      H. N. Worthley (October 2): The European corn borer has increased in abundance around State College this year.
- Ohio      E. W. Mendenhall (October 21): Some damage is reported in the northwestern counties of the State, especially near Toledo. It shows that the pest is increasing.

CHINCH BUG (Blissus leucopterus Say)

- Pennsylvania      T. L. Guyton (October 7): Chinch bugs have been reported in Sudan grass in Catawissa, and they also have been reported doing damage to corn, oats, and young grass.
- Illinois      W. P. Flint (October 24): The chinch bug population in the central part of the State has built up very strongly during the latter part of the summer. At present there are enough bugs in hibernation so that we will have serious damage extending from McLean and Hancock Counties, on the north, southward to Washington, St. Clair, and Jefferson Counties on the south.
- J. H. Bigger (October 13): Chinch bugs have been flying into hibernation in western counties. A recent survey has indicated wide spread this season north and west to Bloomington and Jacksonville.
- Ohio      T. H. Parks (October 24): The chinch bug is moderately abundant only in the northern and western counties.
- J. S. Houser (October 5): Chinch bugs have caused serious damage to bluegrass in lawns in Canton.
- Iowa      H. E. Jaques (October 25): The chinch bug is moderately abundant in Des Moines County.
- Missouri      L. Haseman (October 22): Chinch bugs in dangerous numbers went into winter quarters in a few counties of the northwestern quarter of the State.
- Tennessee      C. Benton (September 30): Some numbers of the second and fourth instar nymphs were observed in volunteer wheat 4 miles north of Fayetteville.

CORN FLEA BEETLE (Chaetocnema pulicaria Melsh.)

- Illinois      J. H. Bigger (September 15): The corn flea beetle was noted as abundant in cornfields the last of August and the first part of September.

ALFALFA

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Mississippi

C. Lyle and assistants (October): The three-cornered alfalfa hopper was reported in Bolivar and Washington Counties. Damage still very noticeable. (G. I. Worthington)

SORGHUM

SORGHUM WEBWORM (Celama sorghiella Riley)

Mississippi

G. I. Worthington (October 19): The sorghum webworm was found damaging heads of sugarcane in Washington County.

GARDEN WEBWORM (Loxotege similalis Guen.)

Indiana

J. J. Davis (October 24): The garden webworm was abundant in alfalfa at Mt. Vernon, October 5.

SOYBEAN

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis Hbn.)

Louisiana

W. A. Douglas (September 29): The first injury to soybeans was found on September 15. The infestation is at present very light and it is not expected that control measures will be necessary, as most varieties of soybeans are practically mature. This insect has appeared later each year since the first appearance in 1929 and each year the injury has been less severe.

GRASS

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Michigan

R. Hutson (October 23): L. frugiperda is destructive in greenhouses all over southern Michigan and the larvae are working upon overbearing strawberry in southwestern Michigan.

Louisiana

W. A. Douglas (September 29): The southern grass worm is doing some injury to soybeans. The infestation at this time is light.

J. W. Ingram and E. K. Bynum (September 29): Larvae were observed in large numbers injuring planted sugarcane near Houma during September.



Mississippi

State Plant Board, Press Release (October 26): The southern grass worm, which was so abundant in the fall of 1930, was conspicuous by its absence this year, being reported abundant in only one case in Attala County.

California

S. Lockwood (July 27): This noctuid larva has been responsible for very severe damage to field and sweet corn on about 1,000 acres in the Mission and Tia Juana valleys of San Diego County. Reports have come to this office that seem to indicate that this same condition exists in parts of Los Angeles County. The later sweet corn will be entirely ruined and the tonnage of the field corn will be cut severely. It is not uncommon to find as high as four or five worms to one corn plant. (October 5): This insect has been more than normally abundant this fall. The trouble has extended as far north as Monterey County, where this worm has attacked lettuce and tomatoes.

WEBWORMS (Crambus spp.)

Ohio

J. S. Houser (October 5): There were very heavy catches of crambids in light traps throughout most of September.

Indiana

J. J. Davis (October 24): Webworms continued to be occasionally reported. Small worms, probably of the third seasonal generation, were damaging lawns at Bluffton (October 3) and Connersville (October 12). The underground tubers of carrots were seriously eaten into by a webworm at Ft. Wayne, October 5. Adults have not yet been reared.

W. B. Noble (September 21): Half-grown larvae are abundant in greens on a golf course near Lafayette, also common in one other grassy area examined, but in these locations most of the larvae were dead; apparently killed by bacterial diseases, the hot humid weather during most of September having been favorable to such a development. Possibly these diseases mean the end of the past season's outbreak and may be an important reason why such outbreaks are so infrequent.

Illinois

W. P. Flint (October 24): Several cases of damage in greenhouses have been reported during the past two weeks.

J. H. Bigger (October 13): Sod webworms, C. trisectus Walk., flew in large numbers in western Illinois during the period of August 20 to September 1, or after.

Kentucky

M. L. Didlake (August 26): Specimens collected in Fayette County, August, have been identified as C. mutabilis Clem. and C. teterrellus Zinck. Specimens reared in the laboratory from worms collected in Fayette County, July 15, as C. trisectus Walk. and C. teterrellus Zinck.

Correction: The note by W. A. Price on Crambus spp. in Kentucky in the Insect Pest Survey Bulletin, Vol. 11, No. 6, p. 346, should end with the next to the last sentence. The last sentence refers to damage by Jalysus spinosus.

A TIGER MOTH (Apantesis phyllira Drury)

Tennessee

C. Benton (September): No commercial damage noted in southern Tennessee, but the third-brood larvae were rather common in early September near Fayetteville, and especially plentiful in Marshall County south of Lewisburg. Pupae were common in the latter vicinity September 9. A few moths were taken at lights in Fayetteville, September 10 - 20.

A DIGGER BEE (Andrena asteris Robertson)

West Virginia

F. W. Craig (October 2): A digger bee was reported attacking a lawn at Charleston on October 2. The soil was of the sandy type along a terrace on the river bottom. One small lawn was honey-combed with burrows and piles of sand so thick that they overlapped and bees were in a swarm overhead. Neighboring lawns have a few also. (Det. by G. A. Sandhouse, Oct. 23.)

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

J. W. Ingram and E. K. Bynum (September 29): Infestations in sugarcane showed a normal increase during the month of September. At the end of the month the infestations ranged from about 5 per cent to 80 per cent bored stalks.

SUGARCANE BEETLE (Eutotheola rugiceps Lec.)

Louisiana

W. A. Douglas (September 29): Out of 800 stubs examined, 24 were found to have been injured, which gives an average of 3 per cent injury. The sugarcane beetle injury and stalk borer injury are seldom found on the same stalk.

Alabama

J. M. Robinson (October 21): The sugarcane borer is moderately abundant on strawberries at Center.

FRUIT INSECTS

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

sachusetts

A. I. Bourne (October 26): The codling moth again caused a considerable amount of injury. This was almost entirely confined to late stings by late second-brood worms. The second brood was of considerable size.

necticut

W. E. Britton (October 24): The codling moth is moderately abundant.

York

P. J. Parrot (October 23): The codling moth is very abundant in the western part of the State.

aware

L. A. Stearns (October 23): Late-season injury by the codling moth is reported light.

nsylvania

T. L. Guyton (October 1): The codling moth is moderately abundant in Franklin County.

H. N. Worthley (October 26): Late second-brood worms are less abundant than in 1930 at State College. It is moderately abundant at Biglerville, Adams County, where there is heavy damage in some orchards.

yland

E. N. Cory (October 22): The codling moth is moderately abundant.

t Virginia

L. M. Peairs (October 24): Heavy injury by the codling moth has been reported from all sections of the State.

ginia

W. J. Schoene (October 26): The codling moth is moderately abundant in Roanoke. The apple growers in the commercial sections of the Shenandoah Valley and in and about Roanoke reported a large number of stings on fruit but very few codling moth worms. It is believed that the stings were caused by a large carry-over from last year.

gia

C. H. Alden (October 23): Larvae in winter cases are very abundant.

T. H. Parks (October 24): In spite of the year being very favorable and a high larval population to begin with last spring, this insect has been well controlled in most commercial orchards. There was a very small third generation in Lawrence County compared with last season. There are numerous stings on fruit on the hill orchards, but few live worms have survived the spray program. The growers have made a big effort to control the insect and did more thorough summer spraying than ever before.



- Indiana J. J. Davis (October 24): The codling moth is moderately abundant.
- Michigan R. Hutson (October 23): On September 29, Mr. H. J. Lurkins, County Agent of Berrien County, brought to my attention 10 Hale peaches which a farmer living in his county had brought in. These peaches were infested with codling moth larvae and the grower reported a noticeable loss.
- Minnesota A. G. Ruggles (September 26): The codling moth is very abundant in apple sections of the State. More side injury than usual.
- Iowa H. E. Jaques (October 25): The codling moth is very abundant in unsprayed orchards.
- Missouri L. Haseman (October 22): Control of the codling moth is quite satisfactory in the northern half of the State. Not so generally satisfactory in southern part of State.
- Utah G. F. Knowlton (October 21): The codling moth is very abundant. There is considerable damage, partly due to the light crop of apples.
- Washington M. A. Yothers (October): Infestation the past season has been greater than for many years, according to reports of orchardists, county agricultural agents, and fruit company field men.
- Oregon D. C. Mote (September): B. G. Thompson reports that activity has ceased in the Willamette Valley. No eggs have been laid since the first week in September. Approximately 95 per cent of the apples are wormy on unsprayed plots.
- California E. O. Essig (September 28): The codling moth is moderately abundant.
- FRUIT TREE LEAF ROLLER (Archips argyrospila Walk.)
- California E. O. Essig (September 28): The fruit tree leaf roller is scarce.
- EYE-SPOTTED BUDMOTH (Spilonota ocellana Schiff.)
- New York P. J. Parrott (September 30): The eye-spotted budmoth is very abundant in western New York.
- PISTOL CASE BEARER (Coleophora malivorella Riley)
- West Virginia L. M. Peairs (October 24): The pistol case bearer is reported from the Eastern Panhandle; it shows considerable spread.

APPLE LEAF SKELETONIZER (Psorosina hammondi Riley)

W. A. Price (October 24): The apple leaf skeletonizer was reported doing damage in several orchards at Paducah.

LESSER APPLE WORM (Laspeyresia prunivora Walsh)

M. P. Zappe (October 24): The lesser apple worm is very abundant on late apples (Baldwin and Greening). Baldwins from one orchard in Hamden had 14 per cent of the apples injured. Usually this insect is not important.

APPLE CURCULIO (Tachypterellus quadrigibbus Say)

A. I. Bourne (October 26): The apple curculio continued to be a rather serious pest of apples, particularly in the hill towns west of the Connecticut River.

A. G. Ruggles (September 26): The apple curculio did considerable damage at La Crescent.

ROUND-HEADED APPLE TREE BORER (Saperda candida Fab.)

J. S. Houser (October 5): There have been many more records of damage from the round-headed apple tree borer than usual. One orchard was found near Danbury in which practically every tree was damaged.

L. Haseman (October 22): At Columbia round-headed apple-tree borers which hatched this summer are (October 20) seemingly half grown and are mostly entering the wood for wintering. Very abundant and destructive.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

L. Haseman (October 22): The flat-headed apple-tree borer is unusually abundant in winter tunnels. They seem to be heavily parasitized.

C. Lyle (October 22): On October 15 a correspondent at Sebastopol reported severe injury to young pecan trees by the flat-headed apple-tree borer.

WOOLLY APPLE APHID (Eriosoma lanigerum Hausm.)

G. F. Knowlton (October 13): The woolly apple aphid has been moderately abundant on apple trees all the season.

M. A. Yothers (October): The woolly apple aphid is still observed in great abundance in some orchards in Wenatchee, but is pretty well eliminated by predacious enemies in others. The presence of this insect in such great numbers, particularly

upon the water sprouts in the center of apple trees, is so obnoxious to pickers that orchardists have to cut out the center twigs and sprouts previous to harvesting.

ROSY APPLE APHID (Amuraphis roseus Baker)

New York P. J. Parrott (October 23): The rosy aphid is moderately abundant in the western part of the State.

BUFFALO TREEHOPPER (Ceresa bubalus Fab.)

Pennsylvania E. P. Felt (October 23): The buffalo treehopper, or a closely related species, severely injured apple branches in the Philadelphia area. In one case the egg scars were nearly contiguous.

Washington M. A. Yothers (October): The buffalo treehopper, the green clover treehopper, and occasionally other species continue to do great injury to young apple and pear trees in alfalfa-cover-cropped orchards.

APPLE LEAFHOPPERS (Cicadellidae)

Massachusetts A. I. Bourne (October 26): Apple leafhoppers late in August and throughout September were very abundant quite generally over the State, particularly in orchards in the eastern and southeastern counties where there was considerable bleaching of the foliage and spotting of the fruit.

Connecticut W. E. Britton (October 24): Apple leafhoppers are moderately abundant.

Rhode Island A. E. Stene (October 21): Apple leafhoppers are moderately abundant.

New York P. J. Parrott (September 30): Apple leafhoppers, Tephlocyba pomaria McAtee, are very abundant in the western part of the State. (October 23): Apple leafhoppers are moderately abundant in the Hudson Valley and scarce in the western part of the State.

Pennsylvania H. N. Worthley (October 2): Apple leafhoppers are moderately abundant at Biglerville, Adams County; numerous enough to annoy pickers.

Delaware L. S. Stearns (October 23): Apple leafhoppers are abundant throughout the State.

Virginia W. J. Schoene (October 26): At the time of the last report (September 23) leafhoppers were very numerous in a few orchards, annoying pickers by getting into their eyes and ears and also snecking the fruit and damaging the foliage. The worst injury



reported was in the orchards in the Roanoke section, although leafhoppers were abundant in orchards near Harrisonburg. The presence of the leafhopper specks on apples caused some of the growers who were not prepared to wash their fruit great inconvenience and some loss. A few leafhoppers are still present though their numbers have been somewhat lessened.

Ohio T. H. Parks (October 24): Apple leafhoppers were bad in the trees during picking.

Illinois J. H. Bigger (October 13): Apple leafhoppers are reported as very abundant; annoying while picking apples.

Kentucky W. A. Price (October 24): Apple leafhoppers have been very abundant in the orchards of the western and central part of the State. At Lexington they have specked the fruit and damaged the foliage.

Wisconsin E. L. Chambers (October 27): Apple leafhoppers are moderately abundant.

Minnesota A. A. Granovsky (October 22): Apples leafhoppers are moderately abundant. Some are present on foliage, discoloring it. They are mostly Emboasca fabae Harris.

Missouri L. Haseman (October 22): Leafhoppers of several species came to lights about October 15 for two or three nights in unusual numbers. The rose leafhoppers have been especially abundant on apple foliage.

Nebraska M. H. Swenk (October 26): On the night of October 4 there were enormous flights of the leafhopper Xerophloea viridis Fab. in southeastern Nebraska, from Omaha and Lincoln west to Kearney. The insects were so numerous as to cause much comment in the newspapers of the following day.

APPLE REDBUG (Lygidea mendax Reut.)

Massachusetts A. I. Bourne (October 26): The redbug in our annual checkup of fruit proved to be quite generally abundant throughout the State and to have caused its usual amount of damage. It does not appear to have been unduly abundant in any particular section.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Pennsylvania T. L. Guyton (October 1): The San Jose scale is moderately abundant in certain orchards at Harrisburg, Franklin County.

H.N. Worthley (October 26): The San Jose scale is moderately abundant at State College. This insect is seen on apple fruits and is more numerous than in 1930.

Delaware

L. A. Stearns (October 23): The San Jose scale is generally on the increase.

Georgia

O. I. Snapp (October 20): Infestation has rapidly increased during the warm September and early October at Fort Valley until now it is heavier than during an average year.

Florida

J. R. Watson (October 25): The San Jose scale is perhaps more abundant than usual for October, as dry weather has checked the entomogenous fungi.

Ohio

T. H. Parks (October 24): The San Jose scale was decidedly more abundant this year than it has been for several years.

Indiana

J. J. Davis (October 24): The San Jose scale is unusually abundant, especially in the southern half of the State. The mild winter of 1930-31 was favorable for successful hibernation and the favorable and long season has enabled them to increase to very threatening numbers.

Illinois

J. H. Bigger (October 13): The San Jose scale is very abundant, greatly increased in 1931.

Wisconsin

E. L. Chambers (October 26): Several new isolated infestation not widely distributed in southern Wisconsin were discovered in Waterloo, Ft. Atkinson, Glen Flora, and Waukesha, all apparently spread on uninspected nursery stock from infested towns.

Missouri

L. Haseman (October 22): The San Jose scale has built up seriously in the southeastern part of the State in some orchards.

Mississippi

C. Lyle and assistants (October): This insect is unusually abundant over practically the entire State, being particularly noticeable on sand pears, which were reported as being in bloom on October 20 in the southern part of the State.  
(Abstract, J.A.H.)

APPLE MAGGOT (Rhagoletis pomonella Walsh.)

Maine

C. R. Phipps (October 26): The apple maggot is unusually abundant and destructive.

Massachusetts

A. I. Bourne (October 26): The apple maggot caused more injury than was the case last year, throughout the State. The flies showed a tendency to emerge later than usual and persisted through late August and into early September.

GIANT HORNET (Vespa crabro L.)

ew York

P. M. Eastman (October 22): A resident of New Paltz writes as follows, "Enclosed find letter from assistant county agent in regard to a new hornet that ate lots of my apples on the tree this season and may ruin my whole crop next year. There are other lots in the neighborhood."

PEACH

ORIENTAL FRUIT MOTH (Laspeyresia molesta Busck.)

ennsylvania

T. L. Guyton (October 22): The oriental fruit moth is moderately abundant on late peaches.

elaware

L. A. Stearns (October 23): Considerable late-season injury by oriental fruit moth is reported on apples.

est Virginia

L. M. Peairs (October 24): The oriental fruit moth is moderately abundant at Morgantown. It increased notably in the late summer.

orgia

O. I. Snapp (October 1): There was no new injury to peach twigs at Fort Valley during September on account of their hardened condition. Broods were overlapping.

io

T. H. Parks (October 24): The oriental fruit moths are bad in quinces.

J. S. Houser (October 5): The oriental fruit moth is very abundant. There were heavy losses in northern Ohio.

ntucky

W. A. Price (October 24): The oriental fruit worm was quite active on the twigs during October. At Lexington and Bandana and in some orchards about Henderson and Paducah the twig injury was severe. At Lexington the wilted twig stage was present as late as October 17.

Mississippi

C. Lyle and assistants (October): The oriental fruit moth was reported by Mr. F. A. Smith as very abundant in the six northwesternmost counties in the State. (Abstract, J.A.H.).

PEACH TWIG BORER (Anarsia lineatella Zell.)

California

E. O. Essig (September 28): The peach twig borer was unusually abundant on late peaches in Yuba and Sutter Counties in August and September.



PEACH BORER (Aegeria exitiosa Say)

Georgia O. I. Snapp (October 1): Pupation in the field at Fort Valley was light during September as compared with August. The peak of moth emergence occurred on September 11. One female deposited 826 eggs within a 24-hour period. Another female deposited a total of 1,257 eggs. (October 20): The last pupae of the season in the field were collected on October 16.

Indiana J. J. Davis (October 24): Inquiries for controls were received during the past month from Crawfordsville, Indiana Springs, Lakeville, Linden, Milan, Poseyville, Richmond, and Salem.

Nebraska M. H. Swenk (October 26): The peach tree borer was reported as killing peach trees during the third week in October in Douglas County.

Mississippi C. Lyle and assistants (October): The peach borer is very abundant over the greater part of the State. This, however, is not an unusual condition in Mississippi. (Abstract, J.A.H.)

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Massachusetts A. I. Bourne (October 26): The plum curculio caused very serious injury to fruit, particularly apples. Growers on the whole did not have as good success in controlling it this year as they did last.

Pennsylvania H. N. Worthley (October 2): The plum curculio is scarce at State College. There were few late feeding punctures, even on unsprayed trees.

Delaware L. A. Stearns (October 23): The plum curculio is reported as a partial second brood developed in southern Delaware.

Georgia O. I. Snapp (October 1): Second-generation adults began to emerge from the soil on September 26. Twenty-five to 27 days were spent in the soil during September by individuals of the second generation in the larval, pupal, and adult stages combined. Larvae reached maturity in the fruit in 17 days during September.

C. H. Alden (October 23): The plum curculio is in hibernation at Cornelia.

Kentucky W. A. Price (October 24): The plum curculio did serious damage late in the season in some isolated orchards. One fruit grower in Rowan County said that this insect damaged his apple crop 50 per cent this year.

Michigan R. Hutson (October 23): The plum curculio is moderately abundant, and very abundant in restricted localities.

Missouri L. Haseman (October 22): The plum curculio fed and bred later than usual, but no developments this month.

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

Mississippi N. D. Peets (October 17): The shot-hole borer is very abundant on badly kept peach and plum trees in Lincoln, Copiah, and Simpson Counties.

TARNISHED PLANT BUG (Lygus pratensis L.)

Massachusetts A. I. Bourne (October 26): The tarnished plant bug throughout the late summer and early fall proved very abundant, and its attack was unusually persistent. It caused rather conspicuous damage on a number of crops on which it does not usually concentrate. For instance, gladioli suffered considerably from the attacks of this species. There was considerable blighting and other injury on the blossom spikes as a result of plant-bug attack. We had reports of its injury on peaches and on various ornamental shrubs. Early in the season there was considerable twig injury on peaches.

A LEAFHOPPER (Erythroneura plena Beamer)

Georgia O. I. Snapp (October 16): Swarms of these hoppers are now attacking peach foliage at Fort Valley; however, they are not so abundant as they were during the fall of 1930.

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

California E. O. Essig (September 28): Pear leaf blister mites are moving to hibernating quarters around the bases of buds and now in leaf axils, in pear-growing districts throughout the State.

CHERRY

RED-HUMPED CATERPILLAR (Schizura concinna S. & A.)

Ohio T. H. Parks (October 22): These caterpillars were sent to us with the statement that they were defoliating cherry trees in Fairfield County.

PLUM

PLUM GOUGER (Anthonomus scutellaris Lec.)

Nebraska M. H. Swenk (October 26): A Jefferson County correspondent

reported that half of his crop of plums had been destroyed during the summer by the plum gouger.

#### RASPBERRY

##### SNOWY TREE CRICKET (Oecanthus niveus DeG.)

Minnesota

A. G. Ruggles (September 26): Snowy tree crickets are very abundant wherever raspberries are grown. Damage is severe in some places.

#### BLACKBERRY

##### A MITE (Eriophyes essigi Hassan)

Oregon

D. C. Mote (September): W. D. Edwards reports the mites apparently still increasing in the berries. This condition will probably continue as long as the weather remains fairly warm.

#### GRAPE

##### GRAPE LEAFHOPPERS (Erythroneura comes Say)

Maryland

E. N. Cory (October 22): Apple leafhoppers (Erythroneura sp.) are very abundant.

West Virginia

L. M. Peairs (October 24): Grape leafhoppers are unusually numerous.

Minnesota

A. G. Ruggles (September 26): Leafhoppers (species not determined) are extremely abundant over the southern half of the State, particularly on grapes.

J. D. Winters (September 28): The grape leafhopper is occurring in unusually heavy abundance in Hennepin County and vicinity.

##### PACIFIC RED SPIDER (Tetranychus pacificus McG.)

California

E. O. Essig (October 20): Tetranychus pacificus is going into hibernation in grape vineyards in October.

#### PERSIMMON

##### A SCALE (Chionaspis longiloba Cooley)

Alabama

J. M. Robinson (October 21): The long-lobed Chionaspis is abundant on Japanese persimmon at Foley.



PECAN

FALL WEBWORM (Hyphantria cunea Drury)

Georgia

O. I. Snapp (September 28): The fall generation of larvae are now at work on pecan foliage, at Fort Valley.

J. B. Gill (October 25): There has been no extensive damage in the pecan orchards of southern Georgia by the second brood of the fall webworm.

PECAN LEAF CASE BEARER (Acrobasis palliolella Rag.)

Georgia

J. B. Gill (October 25): All larvae of the pecan leaf case-bearer (A. palliolella) have constructed their hibernacula on pecan trees at this time. Based on the relative number of larvae going into hibernation, there will only be a moderate infestation to cause damage to the buds in the spring, even if larvae successfully pass the winter and are not heavily parasitized by the chalcid Secodella acrobasis Crawford.

TWIG GIRDLER (Oncideres cingulatus Say)

North Carolina

R. W. Leiby (October 22): Although the twig girdler is doing considerable injury this fall, it is apparently not present in the more destructive numbers of the fall of 1930.

South Carolina

A. Lutken (October 21): Pecan twig girdlers are causing considerable damage to pecan groves throughout the State.

Georgia

J. B. Gill (October 25): The pecan twig-girdler is causing damage in southern Georgia, especially to pecan trees growing adjacent to woodlands. The extent of damage is not so severe as in some years.

Alabama

J. M. Robinson (October 21): The hickory twig-girdler is abundant on pecan in Montgomery.

Mississippi

State Plant Board (October 26): The hickory twig-girdler has been reported as injurious in various sections of southern Mississippi.

BLACK PECAN APHID (Myzocallis fumipennellus Fitch)

Florida

J. R. Watson (October 21): The black aphid was very abundant on pecans during the summer, extending up into October.

CITRUS

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Georgia

J. B. Gill (October 25): The citrus whitefly is moderately abundant on Satsuma oranges and ornamentals in southwestern Georgia.

- Florida J. R. Watson (October 25): The citrus whitefly is moderately abundant; more than for several years. The entomogenous fungi were checked by dry weather.
- Alabama J. M. Robinson (October 21): The citrus whitefly is moderately abundant on crepe myrtle at Tuscaloosa and on Satsuma orange at Oxford.
- Mississippi C. Lyle and assistants (October): Mr. H. Gladney reports the citrus whitefly as very abundant on citrus at Ocean Springs (Abstract, J. A. H.)

A MEALYBUG (Phenacoccus gossypii Towns. & O'kell.)

- California Monthly News Letter, Los Angeles County Agr. Comm. (September 15): The Mexican mealybug P. gossypii is rapidly becoming a serious pest of ornamentals and certain garden crops in Los Angeles County.
- This mealybug has attracted particular attention as a pest of ornamentals and is a very omnivorous feeder. Cosmos, chrysanthemum, aster, dahlia, Australian pea, hollyhock, ivy-geranium, and many others have been killed by its attack. Among wild plants, sunflower and cocklebur carry very heavy infestations. It has been known to severely injure small plantings of eggplant, pepper, and okra, while tomatoes, beans, and a number of related plants are also hosts. Proximity to plantings of ornamentals seems to be the source of field-crop infestations which would probably limit its seriousness as a pest of commercial acreage.

FLORIDA RED SCALE (Chrysomphalus ficus Ashm.)

- Florida J. R. Watson (October 25): The Florida red scale is very abundant and is increasing.

BLACK SCALE (Saissetia oleae Bern.)

- California E. O. Essig (September 28): The black scale is moderately abundant.

PURPLE SCALE (Lepidosaphes beckii Newm.)

- Georgia J. B. Gill (October 25): The purple scale is scarce on Satsuma orange trees in southwestern Georgia.
- Florida J. R. Watson (October 25): The purple scale is moderately abundant and is more abundant than usual for several years. Entomogenous fungi were checked by the dry weather.

LEAF-FOOTED BUGS (Leptoglossus spp.)

- Florida J. R. Watson (October 21): L. gonagra Fab. was abundant on

some citrons growing in a citrus grove in Polk County. Besides the citrons, they were attacking mid-season varieties of oranges, but not the late varieties. This is the first instance of this insect being of economic importance that has been brought to out notice in Florida. L. phyllopus L. is always abundant and injurious, and is now doing some damage to satsuma oranges in Alachua County. The citrons involved in the outbreak were the cucurbits, not the citrus citron.

FIRE ANTS (Solenopsis spp.)

California

Monthly News Letter, Los Angeles County Agr. Comm. (September 15): Young citrus trees, mainly oranges, have been damaged to a considerable extent this season by various species of fire ants (Solenopsis). Damage has not been entirely confined to citrus, as the ants have been found working at the base of aster plants in connection with the aster root aphid; also on peach trees.

FULLER'S ROSE BEETLE (Pantomorus fulleri Horn)

Mississippi

H. Dietrich (October 20): Fuller's rose beetle was defoliating satsuma orange and destroying chrysanthemum and zinnia plants at Lucedale on September 30. It was found in considerable numbers on Cedrus deodara in a nursery at Lucedale, chewing off the new tender needles on October 19.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida

J. R. Watson (October 25): The citrus rust mite is moderately abundant and unusually troublesome during the late summer due to dry weather.

GUAVA

CARDIN'S WHITEFLY (Aleurodicus cardini Back)

Florida

G. B. Merrill (October 6): Cardin's whitefly was reported from Sanford, on a city lot on guava October 5; severe infestation. (Collected by G. H. Baker.)

RED-BANDED THRIPS (Solenothrips rubrocinctus Giard)

Florida

J. R. Watson (October 21): S. rubrocinctus was found causing russetting of guavas at Lake Alfred.



TRUCK - CROP INSECTS

VEGETABLE WEEVIL (Listroderes obliquus Gyll.)

Mississippi H. Dietrich (October 20): The vegetable weevil was injuring turnips by eating off leaves at Lucedale on October 20. This is the first notice of this pest this year.

FLEA BEETLES (Halticinae)

Mississippi H. Dietrich (October 20): Flea beetles Phyllotreta bipustulata Fab., P. vittata Fab., and P. aeneicollis Cr., were very abundant on turnip and cabbage in southern George County on October 8.

C. Lyle (October 22): A correspondent at Courtland sent to this office on October 14 specimens of P. vittata with the report that they were abundant on turnips.

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Alabama K. L. Cockerham (October 1): Adults were quite plentiful on the foliage of fall Irish potatoes at Foley, Baldwin County.

BLISTER BEETLES (Epicauta spp.)

South Carolina J. B. Hall (October 19): The margined blister beetle (E. marginata Fab.) is causing considerable damage to ornamental gardens at Charleston by feeding on the foliage of ivy.

Illinois J. H. Bigger (October 13): Blister beetles, mostly E. vittata Fab., are more abundant than ordinarily during the season of 1931. They were caught in the car while I was traveling along roads on several occasions.

Mississippi C. Lyle and assistants (October): Striped blister beetles are very abundant over the northwestern counties.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Alabama J. M. Robinson (October 21): The green stink bug is moderately abundant on beans at Mobile.

Mississippi C. Lyle and assistants (October): The green stink bugs are moderately abundant on peas at Ocean Springs. (October 20): The southern green stink bug adults and various stage nymphs have been unusually abundant throughout the month on cowpeas and butter lima beans in George County, in many cases destroying most of the crop. The brown cotton bug (Euschistus servus Say) is present with the above but in lesser numbers.

GREEN STINK BUG (Acrosternum hilaris Say)

Virginia C. R. Willey (October 23): Specimens of the green soldier bug were received October 1, from Kinsale, Westmoreland County, where they were damaging butter beans.

FALSE CHINCH BUG (Nysius ericae Schill.)

Mississippi C. Lyle (October 22): Severe injury to turnips by the false chinch bug was reported from Crystal Springs, on September 29.

POTATO

POTATO FLEA BEETLE (Epidrix cucumeris Harr.)

West Virginia F. W. Craig (October 5): The potato flea beetle seemed about normal on the leaves, but considerable damage was done to the tubers by the larvae. This damage was the first of its kind to be noticeable in our potato section along the Ohio River.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Virginia H. G. Walker (October 27): The potato leafhopper is moderately abundant on the Eastern Shore of Virginia.

Florida J. R. Watson (October 21): The bean jassid, E. fabae, is also becoming rather abundant on beans, but perhaps not more so than during the average season.

Ohio T. H. Parks (October 24): The potato leafhopper is very abundant.

HORNWORMS (Protoparce spp.)

Maine C. R. Phipps (October 26): The tomato worm (P. quinquemaculata) is unusually abundant and widespread.

West Virginia F. W. Craig (October 5): Tomato hornworms were very bad in Mason County.

Illiana J. J. Davis (October 24): A number of tomato worm pupae from several sections of the State have been submitted for identification. This would seem to indicate that tomato worms were more abundant than usual this season.

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

- Connecticut      N. Turner (October 19): The beetle is now very abundant in all sections of the State except the extreme northeastern part. The second-generation emergence was completed by October 1. Eggs were found in the field September 18. In the insectary third-generation eggs were deposited in small numbers as early as September 5. There was no indication of development of a third generation in the fields. Large numbers of adults went into hibernation during the first half of October.
- Rhode Island      A. E. Stene (October 21): The Mexican bean beetle is moderately abundant.
- Pennsylvania      T. L. Guyton (October 1): The Mexican bean beetle is moderately abundant at Harrisburg.
- H. N. Worthley (October 26): The Mexican bean beetle is moderately abundant at State College. This insect has increased in later generations and the adults are now going into hibernation.
- Delaware          L. A. Stearns (October 23): Population is reported greatly increased during the latter part of the summer.
- Maryland          E. N. Cory (October 22): The Mexican bean beetle is very abundant.
- West Virginia      F. W. Craig (October 5): This insect did not amount to much throughout the season, but the second generation developed into a numerous brood and there are large numbers of the adults to enter hibernation.
- L. M. Peairs (October 24): The Mexican bean beetle is moderately abundant at Morgantown. Large numbers are still active, and feeding extensively on soybeans.
- Virginia          W. J. Schoene (October 26): The Mexican bean beetle is moderately abundant in Blacksburg.
- H. G. Walker (October 27): The Mexican bean beetle is very abundant in Norfolk and on the Eastern Shore of Virginia.
- Georgia            O. I. Snapp (October 1): Bean fields at Fort Valley which had been damaged, were practically free of larvae on this date.
- C. H. Alden (October 23): The Mexican bean beetle is moderately abundant at Cornelia.



Ohio T. H. Parks (October 24): The Mexican bean beetle is very abundant and is now worse than it has been for years.

Indiana J. J. Davis (October 24): The Mexican bean beetle is very abundant.

Kentucky W. A. Price (October 24): The Mexican bean beetles were present in large numbers at Lexington, Murray, and Aragua on September 30.

Mississippi C. Lyle and assistants (October): This insect was reported as moderately abundant and doing considerable damage in the northeastern corner of the State, from Alcorn County to Monroe County. (Abstract, J.A.H.)

BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Mississippi C. Lyle and assistants (October): Reports of serious injury have been received from points in all parts of the State.

BEAN LEAF ROLLER (Goniurus proteus L.)

Florida J. R. Watson (October 21): The bean leaf roller is beginning to be very abundant on beans.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

Florida J. R. Watson (October 25): E. lignosellus was very injurious to early-planted beans throughout most of Florida during the last part of September and the first part of October.

Mississippi C. Lyle (October 22): Medium injury to beans at Lyman was reported on October 15.

CABBAGE

IMPORTED CABBAGE WORM (Pieris rapae L.)

West Virginia F. W. Craig (October 5): Cabbage worms were very bad in Mason County.

Virginia H. G. Walker (October 27): A fungus has aided greatly in the control of the imported cabbage worm and of the cabbage looper, Autographa brassicae Riley, in the Norfolk section.

Ohio T. H. Parks (October 24): The imported cabbage worm is very abundant.

South Dakota H. L. Severin (October 20): The imported cabbage worm is more abundant than usual.

Iowa H. E. Jaques (October 25): The imported cabbage worm is moderately abundant in many counties.

Missouri L. Haseman (October 22): The imported cabbage worm was reported at Columbia. Butterflies are on wing in small numbers. Worms continue to feed.

CROSS-STRIPED CABBAGE WORM (Evergestis rimosalis Guen.)

Mississippi C. Lyle (October 22): On October 17 a correspondent at McComb reported severe injury to collard plants by caterpillars identified as Pieris protodice Bdv. & Lec. and E. rimosalis.

CABBAGE WEBWORM (Hellula undalis Fab.)

Virginia H. G. Walker (October 27): Larvae were found in several fields of kale, collards, and broccoli near Norfolk.

South Carolina A. Lutken (October 21): Cabbage webworms have been unusually abundant on turnips, rutabagas, and collards.

Alabama J. M. Robinson (October 21): The turnip webworm is very abundant on collards at Societyhill.

California H. Ryan (October 17): Considerable damage by this insect is occurring to cauliflower.

CABBAGE APHID (Brevicoryne brassicae L.)

Virginia H. G. Walker (October 27): The cabbage aphid is rapidly increasing on broccoli and collards.

Mississippi H. Gladney (October 20): The cabbage aphid is moderately abundant on collards at Ocean Springs.

HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia C. R. Willey (October 23): We are still getting specimens of the harlequin cabbage bug occurring on "salads."

Georgia J. B. Gill (October 25): The harlequin bug is moderately abundant on collards at Albany.

Alabama J. M. Robinson (October 21): The harlequin bug is moderately abundant at Auburn.

Mississippi C. Lyle and assistants (October): The harlequin bug was reported during the latter half of the month as doing considerable damage to turnips, cabbage, collards, and dahlias over the greater part of the State. (Abstract, J.A.H.)

ASPARAGUS

BETT ARMYWORM (Leptygma exigua Hbn.)

California S. Lockwood (October 5): The sugar beet armyworm has been responsible for some little damage to asparagus. However, as this plant is a monocotyledon and the chewing is confined entirely to the bark, it is questionable whether any actual monetary loss has been suffered.

MELONS

MELON APHID (Aphis gossypii Glov.)

Nebraska M. H. Swenk (October 26): Reports of injury continued to be received until October 4, when they ceased abruptly.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

West Virginia L. M. Peairs (October 24): The striped cucumber beetle is very abundant on soybeans at Morgantown.

F. W. Craig (October 5): The cucumber beetle did not seem to be so numerous as usual during the early part of the season, but damage to the melon fruits was attributed to the larvae. Where the melon came in contact with the soil the rind was punctured with numerous small holes. These did not go through the rind into the flesh and would have been insignificant if it was not for the fact that they allowed the entrance of rot organisms.

Florida J. R. Watson (October 25): The striped cucumber beetle is very abundant in everglades only.

Ohio J. S. Houser (October 5): The striped cucumber beetle is very abundant.

Minnesota A. A. Granovsky (September 27): The striped cucumber beetle is moderately abundant. It is common in all cantaloupe and cucumber fields about St. Paul and Minneapolis.

Iowa H. E. Jaques (October 25): The striped cucumber beetle is moderately to very abundant in Pocahontas, Poweshiek, and Emmet Counties.

Missouri L. Haseman (October 22): The striped cucumber beetle is reported at Columbia. It is less abundant than a year ago but there are plenty of them. They are still feeding.



PICKLE WORM (Diaphania nitidalis Stoll)

- Connecticut      W. E. Britton (October 24): This is the first injury by this insect that I have ever seen or had reported in Connecticut. Until now we did not have an adult in our collection. It is attacking cucumber and summer squash at Branford, Hamden, and Greenwich.
- Maryland      E. N. Cory (October 22): Diaphania nitidalis was reported on squash in Baltimore County.
- South Carolina      W. J. Reid, Jr. (October 23): The heavy infestation of fall squash plantings at Charleston by the pickle worm and the melon worm (D. hyalinata L.), reported in September, has continued throughout October. Injury to the fruit has been quite general. No squash whatever has been harvested in this section from unpoisoned plantings. In most instances plants in unpoisoned fields are now entirely dead as a result of the insect attack. A second fall generation of both species appeared in the middle of October. Adults of both species were abundant in the field throughout October.
- Florida      J. R. Watson (October 23): The pickle worm is unusually destructive to fall-grown cucumbers in the north-central part of the State. Some fields have been utterly destroyed in a week's time. The caterpillars mine the entire stem of the plant. Squashes have not been so severely injured.
- F. S. Chamberlin (October 12): The pickle worm is very destructive to cucurbits in Blountstown at this time.
- W. J. Reid, Jr. (October 21): Fall cucumber plantings in the vicinity of Wauchula, Hardee County, are being severely damaged by the pickle worm and the melon worm, D. hyalinata L. The worms are feeding on buds, leaves, vine stems, and fruit of all sizes. All plantings are apparently infested to some extent, as much as 75 per cent of the fruit being rendered unfit for use. Complete abandonment of several fields by the growers has occurred. Feeding of the worms on the vine stems is quite general. Growers of the county estimate that their 1931 fall cucumber crop of approximately 600 acres will be cut 50 per cent. The pests are much more destructive than usual this fall.

SQUASH

SQUASH BUG (Anasa tristis DeG.)

- Ohio      J. S. Houser (October 5): We have had the most destructive outbreak on record in Ohio this summer from the squash bug.

West Virginia

L. M. Peairs (October 24): The squash bug is very abundant at Morgantown.

SPOTTED BENT WIEWORM (Homonía perspectalis Hbn.)

Mississippi

C. Lyle (October 22): Larvae tentatively identified by J. H. Langston were reported as heavily infesting sweetpotato plants at Fruitland Park, on October 2, and as abundant on pigweed in turnip fields at Incedale, on October 17.

CELERY

GREENHOUSE LEAF TYER (Phlyctagnia rubigalis Guen.)

Pennsylvania

C. A. Thomas (October 20): I have recently found several lepidopterous larvae causing considerable injury by chewing channels in the surface of celery stalks in the field. At least three species are involved: P. rubigalis Guen., which is perhaps most common; a greenish, white-striped looper which I believe to be the celery looper, Autographa falcigena Kby., which is fairly common; and a small brownish striped caterpillar with large black tubercles, black head, and black thoracic shield. A considerable number of small moths, which I believe are the adults of this latter larva, were flying in the celery field when disturbed. Although injury by these three kinds of larvae was not serious it was conspicuous enough to worry the celery growers. The worst injury seems to be on the yellow celery.

Michigan

R. Hutson (October 23): This insect was very abundant on celery during September.

SPINACH

CABBAGE LOOPER (Autographa brassicae Riley)

Ohio

T. H. Parks (October 24): The greenhouse specialist reports cabbage loopers common on spinach at Toledo.

Pennsylvania

C. A. Thomas (October 20): Some injury has been caused to spinach in Bucks County, by the cabbage looper eating holes through the leaves. Eggs of some undetermined tachinid fly were fairly common on the full-grown loopers.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Pennsylvania

C. A. Thomas (October 20): A serious outbreak is now occurring in turnip fields in southern Bucks County. The outbreak has

been apparent only a week or so, and during that time leaves of half-grown turnip plants have entirely died and dried up, so the fields appear burned and brown. Internal insect parasites are not common, but a fungus appears to have effected some slight control. A few syrphid larvae and coccinellids are also present, but not yet common. These aphids are spreading into adjacent fields of black radish.

Virginia H. G. Walker (October 27): The turnip aphid is causing considerable damage to turnip greens and young cabbage seedlings in the Norfolk area.

Mississippi State Plant Board (October 26): Turnip lice have not been numerous thus far, probably owing to the warm weather, which has allowed parasites to continue holding them in check.

#### A PENTATOMID BUG (Peribalus limbolaris Stal)

North Carolina R. W. Leiby (October 17): A single report of very severe injury, similar to that of the Harlequin bug, to a field of turnips at Smithfield has been received. A large number of specimens were sent with the complaint.

#### LETTUCE

##### CORN EAR WORM (Heliothis obsoleta Fab.)

California E. C. Essig (September 23): The corn ear worm injured head lettuce in the Salinas Valley in September, destroying a few entire fields. Larvae enter developing heads and tunnel to the heart.

#### SUGAR BEETS

##### BEET LEAFHOPPER (Eutettix tenellus Baker)

Utah G. F. Knowlton (October 20): The beet leafhopper caused considerable damage to sugar beets in many parts of northern Utah. Russian thistle is now drying up on the desert breeding grounds, and the leafhoppers are scattering to near-by succulent vegetation in Tooele County and Boxelder County areas.

#### MUSHROOMS

##### A HUMPBACKED FLY (Aphiochaeta spp.)

Pennsylvania C. A. Thomas (October 20): Larvae of phorid flies (Aphiochaeta spp.) have caused considerable injury to mycelium and to stems and caps of growing mushrooms in mushroom houses, during late September and October, in Maryland, Delaware, and Pennsylvania. In many instances the destructive abundance of these flies could be traced to the manure having been quite wet when placed in the houses.



FOREST AND SHADE-TREE INSECTS

EUROPEAN FRUIT LECANIUM (Lecanium corni Bouche)

rmont

H. L. Bailey (October 27): Crawlers appeared in considerable numbers on twigs and, later, on the large branches of trees in and about Montpelier during the summer. There had been a heavy infestation of adult scale insects from the year before. Ash and elm were most seriously infested.

BEECH

WOOLLY BEECH APHID (Prociphilus imbricator Fitch)

ryland

C. H. Hanson (October 16): Insects were found on beech trees at Forest Glen.

BIRCH

BIRCH SKELETONIZER (Bucculatrix canadensisella Chamb.)

BIRCH LEAF-MINING SAWFLY (Phyllotreta nemorata Fall.)

ine

J. V. Schaffner, Jr. (September 24): Observations made in several localities between Skowhegan, Guilford, and Monson showed 25 to 50 per cent of the foliage mined with occasional trees showing possibly 75 per cent of the foliage affected. From Monson to Greenville and Bingham to Jackman from 20 to 25 per cent of the foliage was mined. Bucculatrix infestations are severe in these localities.

7 Hampshire

J. V. Schaffner, Jr. (September 24): In the White Mountain section of New Hampshire the birch foliage, especially on the mountain sides, is badly browned by the B. canadensisella. The skeletonizer seems to be largely responsible for this condition though some of it is due to the great abundance of aphids. T. H. Jones noted a heavy infestation of about 2 acres in a growth of small gray birch at Exeter. This was the only instance of injury noted in this section.

York

R. D. Glasgow (October 26): The birch in northeastern New York and including the greater part of the Adirondack area has been severely injured this year and in many places completely defoliated by the middle of September, through the work of one or both of two insect pests, namely, B. canadensisella, and the white birch leaf-mining sawfly (P. nemorata Fall.).

consin

W. Middleton (September): B. canadensisella has been reported as abundant from Wisconsin.

nesota

W. Middleton (September): We have received reports of the abundance of B. canadensisella in Minnesota.

New Hampshire J. V. Schaffner, Jr. (September 24): Observations made during September indicate that the infestations of P. nemorata in sections of New Hampshire and Vermont are quite similar to those of 1930. In the vicinity of Gorham, N. H., an average of about 25 per cent of the paper birch leaves are infested, this being the heaviest observed.

BRONZE BIRCH BORER (Agilus anxius Gory)

Ohio E. W. Mendenhall (October 21): Bronze birch borers are very bad in birch trees in and about Dayton. It looks like the destruction of the birch trees here.

Indiana J. J. Davis (October 24): What was described as typical injury was received from Plymouth, October 13.

BOXELDER

BOXELDER BUG (Leptocoris trivittatus Say)

Delaware L. A. Stearns (October 23): Numerous reports of boxelder bug have been received from southern Delaware.

Maryland E. N. Cory (October 6): Outbreaks have occurred in Somerset, Kent, Anne Arundel, Wicomico, and Montgomery Counties. Previously reported in larger numbers from Worcester County.

Virginia C. R. Willey (October 23): Specimens were received from Clarke County October 1. The letter states: "There are thousands and thousands of them hanging on trees and fences of a place in this town. Crawling in large numbers up the sides of house-- young ones seem to cluster together on trunks and large limbs of the trees."

South Carolina F. Sherman (October 21): The boxelder bug is now present in great numbers on boxelder.

Indiana J. J. Davis (October 24): The boxelder bug was more common than usual and reported from Plymouth, Winamac, Austin, and Logansport. The first report was received October 6, and the last October 23, at which time most of the specimens received were mature. In some cases they were reported abundant on boxelder but in most cases they were reported because of their annoyance in the house.

Illinois W. P. Flint (October 24): Boxelder bugs have been much more annoying than usual this fall, judging by the large number of letters received concerning these insects. For several weeks letters concerning these insects have been received in every mail.

- Wisconsin E. L. Chambers (October 26): Boxelder bugs continued to be very numerous everywhere seeking shelter all during the month of October and many reports came in from all sections of the State for identification and control measures.
- Minnesota A. G. Ruggles (October 27): Boxelder bugs are more numerous than they have been for many years.
- Iowa H. E. Jaques (October 25): The boxelder bug is moderately abundant in Carroll County.
- Nebraska M. H. Swenk (October 26): The boxelder bug was about normally troublesome as a house invader during October.
- Utah G. F. Knowlton (October 13): Boxelder bugs are rather annoying to households now as they seek hibernation quarters. They are apparently less abundant than a year ago at this time.
- Washington M. A. Yothers (October): The boxelder bug is causing a rather common injury to the growing fruits of apples and pears in certain parts of the Wenatchee district. The injury is caused by the insect's feeding puncture and is not greatly unlike that caused by the tarnished plant bug.

#### CATALPA

##### CATALPA SPHINX (Ceratonia catalpae Bdv.)

- South Carolina A. Lütken (October 21): Caterpillars were very abundant during September and were heavily parasitized.
- Ohio E. W. Mendenhall (September 29): The catalpa trees, especially the Bungei variety are badly infested in several sections in southern Ohio.
- Illinois J. H. Bigger (September 15): Caterpillars were damaging shade and ornamental plantings during the last of August.

##### CATALPA LEALYBUG (Pseudococcus comstocki Kuwana)

- Connecticut N. Turner (October 14): Egg masses were received from Norwalk, where they were collected on umbrella catalpa.

#### CEDAR

##### DEODAR WEEVIL (Pissodes deodarae Hopk.)

- Mississippi C. Lyle and assistants (October): Thirty-six larvae were taken from one Cedrus deodora plant. The plant was about 5 feet high.



SOUTHERN PINE WEEVIL (Pissodes nemorensis Germ.)

Mississippi

H. Dietrich (October 20): P. nemorensis was present in number injuring Cedrus deodora in a nursery at Lucedale on October 19.

BLUE PINE BORER (Callidum antennatum Newm.)

Connecticut  
and  
New York

E. P. Felt (October 23): Red cedar, used for fences or ornamental structures, has been invaded and extensively damaged by the blue pine borer; C. antennatum, or a closely related species at both Greenwich, Conn., and on eastern Long Island, N. Y.

ELM

ELM LEAF BORER (Galerucella xanthomelaena Schrank)

California

E. O. Essig (September 28): The elm leaf beetle is spreading to many parts of the State.

ELM BORER (Saperda tridentata Oliv.)

Nebraska

M. H. Swenk (October 26): Several letters received during October complained of damage done to elms during the summer.

HEMLOCK

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Maine

H. B. Peirson (October 24): Specimens of the pine leaf scale have been found on hemlock from several parts of the State.

HICKORY

HICKORY BARK BEETLE (Scolytus quadrispinosus Say)

Ohio

E. W. Mendenhall (October 2): The hickory trees in Fountain Park, Woodstock, are badly infested with the hickory bark beetle. There are 1,000 to 1,500 hickory trees in this grove.

PIGEON TREMEX (Tremex columba L.)

Indiana

J. J. Davis (October 24): The pigeon tremex was reported common at Anderson, October 5, on hickory trees which were apparently in a dying condition.

LARCH

LARCH CASE BEARER (Coleophora laricella Hbn.)

New York R. D. Glasgow (October 26): From Albany north, and as far west as the limits of the Adirondack State Park, nearly all of the larch was defoliated in late September by the late brood. The larch throughout the same area was very generally defoliated by the insect in June. While defoliation in late September alone might be of little consequence, it is likely this season that it will accentuate the damage resulting from the earlier defoliation.

LOCUST

LOCUST BORER (Cyrtene robiniae Forst.)

New York E. P. Felt (October 23): The locust borer was reported as injurious at White Plains. The insect is generally distributed in southeastern New York and very frequently causes serious injury to individual trees or groups of trees, and under exceptional conditions may kill good-sized plantings of young trees.

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Mississippi W. L. Gray (October): The locust leaf miner is moderately abundant on wild black locust in Adams County.

MAPLE

GREEN-STRIPED MAPLE WORM (Anisota rubicunda Fab.)

Mississippi H. Dietrich (October 20): A. rubicunda is defoliating red maple (Acer rubrum) in the Escatawpa River Swamp, George County.

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

Indiana J. J. Davis (October 24): C. femorata was reported damaging maples at Plymouth and Lafayette the past month.

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

Mississippi C. Lyle (October 22): Aphids were received on September 26 from Clinton, where they were reported as abundant on silver leaf maple trees.

WOOLLY MAPLE LEAF SCALE (Phenacoccus acericola King)

Rhode Island J. V. Schaffner Jr. (September 10): Specimens were brought in and there were reports that Norway and sugar maple shade trees in Providence, Pawtucket, Cranston, Warwick, and Woonsocket seem to be quite generally infested.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Ohio E. W. Mendenhall (September 26): The soft maples in Greenville are very badly infested in private and public plantings. The trees have the appearance of cotton on the limbs and branches.

OAK

YELLOW-NECKED CATERPILLAR (Datana ministra Drury)

Mississippi C. Lyle (October 22): Larvae were observed during the past month on oak trees at A. & M. College.

A DATANA CATERPILLAR (Datana contracta Walk.)

Mississippi H. Dietrich (October 20): D. contracta is extremely abundant on various oaks and the river birch (Betula nigra) in the swamps of the Escatawpa River, George County.

ORANGE-STRIPED OAK WORM (Anisota senatoria S. & A.)

North Carolina R. A. St. George (October 3): Larvae were especially abundant causing considerable injury to the foliage of red, scarlet, and southern red oak trees in the Bent Creek section of the Pisgah National Forest. The injury was also noted in other places visited in western North Carolina, indicating that the infestation was quite widespread.

AN OAK WORM (Anisota consularis Dyar)

Mississippi H. Dietrich (October 20): A. consularis was found defoliating oaks in the Escatawpa River swamps, George County.

IMPERIAL MOTH (Basilona imperialis Drury)

Mississippi H. Dietrich (October 20): B. imperialis was taken on oak in the Escatawpa River Swamp, George County.

RED OAK BORER (Romuleum rufulum Hald.)

A LONGHORN BEETLE (Urographis fasciatus DeG.)

Maryland E. N. Cory (October 22): R. rufulum and Graphisurus fasciatus DeG. occur on dying red oak at Annapolis. (Det. by R.A.St.George)



GIANT APHID (Longistilana caryae Harr.)

Massachusetts

E. P. Felt (October 23): The large hickory aphid was reported from Pittsfield. It occasionally becomes extremely abundant on the branches of hickory, beech, and oriental plane.

OBSURE SCALE (Chrysomphalus obscurus Comst.)

Mississippi

C. Lyle and assistants (October): The obscure scale is present on oak trees in Corinth in large numbers and has done serious damage to some of the trees, causing the limbs to die and weakening the whole tree.

PINE

PINE TUBE MOTH (Eulia pinatubana Kearf.)

Maine

H. B. Peirson (October 24): The pine tube builder was very prevalent throughout the vicinity of Augusta. About 90 per cent of the larvae have left the tubes.

New Jersey

E. P. Felt (October 23): The pine tube builder was reported as injurious to pine at Tenafly. It is a common species locally and occasionally abundant upon individual trees or groups of trees.

PINE WEBWORM (Tetralopha melanogrammos Zell.)

Vermont

H. L. Bailey (October 27): The pine webworm was found in considerable numbers on Scotch pine plantations at Essex.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

North Carolina

R. A. St. George (October 3): No southern pine beetle outbreaks were noted or reported during the summer in the Southeastern States except in the Bent Creek and Billy Moores Creek areas of the Pisgah National Forest located near Asheville.

WHITE-PINE WEEVIL (Pissodes strobi Peck)

Maine

H. B. Peirson (October 24): A moderate infestation in Scotch pine of the white pine weevil has been observed at Oquossuc.

A BARK BEETLE (Ips calligraphus Germ.)

Mississippi

C. Lyle (October 22): Bark beetles were reported abundant in a young pine tree at Brookhaven on October 15.

A SAWFLY (Neodiprion pinetum Nort.)

Maine H. I. Peirson (October 24): Two lots of nearly mature larvae were found at Augusta.

PINE LEAF SCALE (Chionaspis pinifoliae Fitch)

Wisconsin E. L. Chambers (October 26): White pine in southwestern Wisconsin forest plantings have been showing unusually heavy infestation (in spots) and trees in ornamental plantings have shown heavy infestations, continuing to grow heavier and heavier late this fall.

Washington M. A. Yothers (Summer, 1931): The pine leaf scale is found commonly on pine trees in almost any part of the pine regions of the eastern slope of the Cascade Mountains lying west of Yakima and Wenatchee.

REDWOOD

A REDWOOD SCALE (Aonidia shastae Coleman)

California E. O. Essig (October 20): The redwood scale (A. shastae) was first taken on giant Sequoia trees at Atwell Mills, near Sequoia National Park, in April, 1931. It occurred in great numbers on the leaves and stems of certain young second-growth trees only in more or less shady areas along the highway, where road dust contributed to the discomfort of the infested trees. Additional material was furnished in August, 1931, from the same locality. Specimens were referred to Prof. G. F. Ferris who determined them as the above.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Indiana J. J. Davis (October 24): Caterpillars were reported abundant at Bedford, October 7.

Nebraska M. H. Swenk (September): Continued to defoliate walnut trees in the southeastern part of the State during the first half of September, and complaints of such injuries continued to be received until the end of the month.

WILLOW

EUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Massachusetts J. V. Schaffner, Jr. (September 24): C. W. Collins observed on August 26 several roadside willows from 25 to 50 per cent defoliated in Norfolk, Walpole, and Wrentham (Norfolk County).

# INSECTS AFFECTING GREENHOUSE AND ORNAMENTAL PLANTS

## WHITE GRUBS (Phyllophaga spp.)

Alabama

H. Dietrich (October 20): Some azalea bushes have had all their roots eaten away by white grubs. There was nothing left except a few white stubs of the larger roots. Lodine tells me that this is the way it works: All azalea bushes are heavily mulched with oak leaves to make the proper acid soil for their growth and to conserve moisture. Now in the spring heavy droves of adult beetles come to town, settle in the trees, and then in the day time seek shelter in the leaf mulch under the azalea bushes. Then they lay their eggs and as a result a large crop of white grubs is found to feed on the azalea roots. Lodine tells me complaints are getting commoner all the time.

## BLUEBERRY STEM BORER (Oberea myops Hald.)

Massachusetts

A. I. Bourne (October 26): In early October there was discovered to be a rather well established infestation of O. myops on various plantings of azalea and rhododendron here on the college campus.

Connecticut

E. P. Felt (October 23): The azalea twig borer, O. myops, was found working in the stems of both azalea and rhododendron at Greenwich.

## TWO-MARKED TREEHOPPER (Eichenopa binotata Say)

Massachusetts

E. P. Felt (October 23): Egg masses of the two-marked tree hopper on dogwood were received from Great Barrington. This insect is also very common on Celastrus or Roxbury waxwork, and its work, in connection with oviposition, has come to hand on several occasions.

## A LYGAEID (Oncopeltis fasciatus Dall.)

Virginia

C. R. Willey (October 23): Several persons have brought in specimens of this insect, which seems to be occurring in numbers on various vines and flowers in Richmond. This is the first time we have had complaints.

## A BLACK SCALE (Saissetia nigra Nietn.)

California

E. O. Essig (October 20): In August G. F. Ferris called the writer's attention to a Pittosporum tree on the Stanford Campus which was rather severely infested. The tree was growing near a building and may have been in just the right sort of a



protected location for the propagation of the insect. Later in September it was collected on aralia and a conifer in a nursery in San Rafael, Marin County, where it was apparently doing nicely in the open. The past few winters have been not or mild in California and may be responsible for the present showing of the coccid.

CAMEL CRICKET (Centronchilus sp.)

Ohio            F. W. Mendenhall (October 15): The cave or camel crickets were very bad and did considerably damage to seedlings in greenhouses in Columbus.

CYCLAMEN MITE (Tarsonemus pallidus Ban'is)

Alabama        J. M. Robinson (October 21): Cyclamen mites are moderately abundant in a greenhouse at Opelika.

GREENHOUSE CENTIPEDE (Scutigera immaculata Newp.)

California     E. O. Essig (September 28): Garden centipedes are abundant in certain greenhouses and small areas in many parts of the State.

CORN EAR WORM (Heliothis obsoleta Fab.)

Maryland       E. N. Cory (October 22): This insect is injuring geraniums and cutting into the base of carnation buds.

Ohio            T. H. Parks (October 24): These larvae ruined many flower buds of chrysanthemum in the greenhouse during September at Logan. They also ate flowers and buds of calendulas both in and outside of the greenhouse. Greenhouse men in Ashtabula, Cuyahoga, Lorain, and Lucas Counties have been losing heavily during September and October from corn ear worm injury to both the green and ripening fruits. This type of injury is very infrequent in greenhouses though of annual occurrence to early tomatoes during July in southern Ohio.

Illinois        W. P. Flint (October 24): Greenhouses all over the State have been invaded by the adults and at the present time many greenhouse crops are suffering severely from the feeding of larvae.

FALL ARMYWORM (Laphygma frugiperda S. & A.)

Michigan       E. I. McDaniel (October 24): Larvae of the fall army worm, the corn ear worm, and possibly some of their relatives are appearing in greenhouses in various parts of Michigan.

The moths are evidently flying in from outside and producing larvae which mutilate the buds and blossoms and later other parts of chrysanthemum, rose, calendula, geranium, and sometimes other plants.

SPOTTED GARDEN SLUG (Limax maximus L.)

Ohio

E. W. Mendenhall (October 14): The spotted giant garden slugs are very bad in gardens in Columbus and do considerable damage to shrubs and ornamental plants.

CANNA

LESSER CANNA LEAF ROLLER (Geshna cannalis Quaint.)

Mississippi

C. Lyle and assistants (October): The lesser canna leaf roller is very common on cannas at Lucedale and Natchez. (Abstract, J.A.H.)

CHRYSANTHEMUM

GREENHOUSE LEAF TIER (Phlyctaenia rubigalis Guen.)

Maryland

E. N. Cory (October 22): The greenhouse leaf tier in Prince Georges County on chrysanthemums is worse than I have ever seen it before.

CHRYSANTHEMUM LEAF MINER (Napomyza chrysanthemi Kowarz)

Maryland

E. N. Cory (October 22): Phytomyza chrysanthemi occurs in a greenhouse on chrysanthemums in Prince Georges County.

CREPE MYRTLE

CREPE MYRTLE APHID (Myzocallis kahawaluokalani Kirk.)

Mississippi

Wm. L. Gray (October 17): The crepe myrtle aphid is very abundant at Narchez, accompanied by sooty mildew.

DAHLIA

A NITIDULID (Conotelus obscurus Er.)

Mississippi

C. Lyle (October 22): Specimens have been received recently from Aberdeen, West Point, Kosciusko, and Oxford, where they were reported as abundant on dahlia blooms.

FERN

FERN SCALE (Hemichionaspis aspidistrae Sign.)

Mississippi

H. Dietrich (October 20): The fern scale practically destroyed all the ferns at one greenhouse in Lucedale.

GLADIOLI

GLADIOUS THrips (Taeniothrips gladioli M. & S.)

New York

P. M. Eastman (October 9): Specimens of the gladiolus thrips have been received from Rochester. From past reports this pest seems to have been quite general throughout the State.

A THrips (Taeniothrips atratus montanus Priesner)

Massachusetts

E. R. Sasser (September 26): Thrips that were sent to J. R. Watson, September 1 from gladiolus, from Longmeadow, Mass. were determined as the European thrips Taeniothrips atratus montanus. Dr. Watson says that this species is a very common thrips in Europe. "It looks very much as if it may have been introduced in gladiolus bulbs. This has never been recorded from this country before. This may possibly prove to be quite a pest on gladiolus. It seems rather peculiar that our introductions should be of the variety montanus, which is confined to Austria and the Balkans, rather than the common European species".

LILAC

GIANT HORNET (Vespa crabro L.)

Connecticut

E. P. Felt (October 23): The European hornet has been exceptionally abundant in several localities in the vicinity of Stamford. They attracted notice mostly because they injured lilac branches.

LILIES

BULB MITE (Rhizoglyphus hyacinthi Bdv.)

Ohio

E. W. Mendenhall (October 19): Lily plants in one of the greenhouses in Greenville are badly affected with bulb mites. The plants are not making any growth but are looking very sickly. Lilies being propagated in one of the greenhouses in Springfield are so badly infested that the plants were taken up and destroyed; also a greenhouse grower in Columbus reports the same thing.

SNAPDRAGON

BUCKEYE BUTTERFLY (Junonia coenia Hbn.)

Mississippi

C. Lyle (October 22): Larvae of Junonia coenia were collected from snapdragons at Greenwood on September 25.



INSECTS ATTACKING MAN AND  
DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicinae)

Oregon

H. H. Stage (September 18): Mosquitoes are abundant in certain situations about the Portland area at this time. Anopheles punctipennis Say and A. maculipennis Meig. are readily taken from widely scattered waters of various types. Culex tarsalis Coq. and C. pipiens L. are abundant about polluted water. Adult Aedes vexans Meig. from mid-June broods still persist and are very bothersome near Wakkenna Falls.

SAND FLIES (Culicoides sp.)

North Carolina  
and  
South Carolina

D. G. Hall (October 22): The abundance of the two dominant summer salt-marsh sandflies, C. melleus Coq. and C. furens Poey, is rapidly decreasing, their place being occupied by C. canithorax Hoff. which will be the most abundant during the fall season.

Florida

J. B. Hull and W. E. Dove (October 12): Sand flies (Culicoides sp.) were abundant about the Keys and islands in the vicinity of Tampa during different times of the year. This section is noted for tarpon fishing and the tourist fishermen suffer the effects of sandfly bites. C. melleus, C. furens, and other species of yellow sand flies are most abundant in the littoral regions of Florida.

EYE GNATS (Hippelates spp.)

South Carolina

W. E. Dove (October 20): With the dry autumn there has been a marked decrease in the number of eye gnats in the vicinity of Charleston. During last autumn they were especially abundant during the rainy season.

Georgia

J. B. Hull and W. E. Dove (October 9): Eye gnats, H. pusio Mall., were most abundant at Wilmington Island in the vicinity of a small ditch leading from an outside toilet.

Florida

J. B. Hull and W. E. Dove (October 10): According to residents in the vicinity of St. Augustine, eye gnats are very annoying to man in these parts. They occur during the warmer months of the year.

CATTLE

STABLE FLY (Stomoxys calcitrans L.)

South Carolina F. M. Prince (October 15): With the advent of the very high tides of this month there was an abrupt decline in the number of stable flies at Folly Beach. Previous to this time mules could not graze. They went into yards having shade and into garages, leaving hundreds of the flies in such places. Occasionally some of the flies bite man, but there was a decided preference for the mules.

Florida W. E. Dove and J. B. Hull (October 17): Previous to the recent spring tides dog flies were very common along the coasts near Jacksonville. The flies were not abundant away from the coasts. Dog flies are sometimes very annoying on Mullet Key and about Fort DeSoto. A few raccoons occur on the island.

Missouri L. Haseman (October 22): Stable flies have been unusually abundant for October at Columbia, also in the southeastern part of the State.

HORN FLY (Haematobia irritans L.)

Missouri L. Haseman (October 22): The horn fly has been unusually abundant for October at Columbia, also in the southeastern part of the State.

HORSE

HORSE BOTFLY (Gastrophilus intestinalis DeG.)

North Carolina R. W. Leiby (October 22): An unusual complaint for our Insect Survey records in this State was made on October 5. The remnants of an adult were identified as the horse botfly. A veterinarian reported a farmer as declaring that the insects were stinging his mules and causing consternation in the pasture field.

HOUSEHOLD AND STORED-PRODUCT

I N S E C T S

TERMITES (Reticulitermes sp.)

General T. E. Snyder (September): During the month of September 124 cases of damage by termites were reported to the Bureau of Entomology. The following list gives the number of cases

reported from each State:

Alabama, 11	Louisiana, 4	Pennsylvania, 4
Arkansas, 4	Maryland, 1	South Carolina, 6
California, 5	Mississippi, 1	Tennessee, 7
Connecticut, 2	Missouri, 5	Texas, 8
District of Columbia, 5	New Jersey, 2	Virginia, 15
Florida, 13	New York, 3	West Virginia, 2
Georgia, 6	North Carolina, 6	Wisconsin, 1
Indiana, 3	Ohio, 3	Philippine Islands, 1
Kentucky, 1	Oklahoma, 4	Hawaii, 1

Indiana J. J. Davis (October 24): Termites were destructive to buildings at Attica and Lafayette, early in October. At Knox (September 26) termites were attacking a corn crib and were also eating into the ears of corn.

Nebraska M. H. Swenk (October 26): The termite R. tibialis Banks was reported destroying fruit trees in Harlan County during the third week in October.

Missouri L. Haseman (October 22): Numerous complaints about termites have been received from all over the State, where the pests are working in houses and in one case in soft maple shade trees.

Alabama J. M. Robinson (October 21): Termites are abundant in an apartment building at Auburn and in houses at Decatur and Mobile.

#### ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi C. Lyle and assistants (October): The Argentine ant situation at Hattiesburg is quite distressing. Complaints are coming in from every part of the infested area.

#### A YELLOW ANT (Lasius interjectus Mayr)

Kentucky W. A. Price (October 24): Winged forms of L. interjectus were taken in large numbers from foundation timbers of a house at Carlisle.

#### SMALLER BAMBOO BORER (Dinoderus minutus Fab.)

Massachusetts E. P. Felt (October 23): A cosmopolitan powder-post beetle, D. minutus, was received from the eastern part of the State, where it had been working in the bamboo frame of an ornamental screen.

#### CARPET BEETLE (Anthrenus scrophulariae L.)

California H. Ryan (October 17): The buffalo carpet beetle is more numerous than usual.



E. O. Essig (October 20): Larvae are unusually abundant in houses in the southern part of the State this summer and fall.

CIGARETTE BEETLE (Lasioderma serricorne Fab.)

Ohio T. H. Parks (October 24): Injury to upholstered furniture was quite severe in a home in Columbus visited in early October. Both beetles and larvae were present.

Alabama J. M. Robinson (October 21): The cigarette beetle is very abundant on furniture at Sheffield.

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis L.)

South Dakota H. C. Severin (October): The saw-toothed grain beetle is very abundant in many sections of the State.

Nebraska M. H. Swenk (October 26): Reports of infestation of stored grains, especially stored wheat, with the saw-toothed grain beetle and other stored grain pests continued to come in during the first half of October.

CONFUSED FLOUR BEETLE (Tribolium confusum Duv.)

South Dakota H. C. Severin (October): The confused flour beetle is very abundant in many sections of the State.

BEAN WEEVIL (Mylabris obtectus Say)

Kentucky W. A. Price (October 24): Bean weevil complaints have been received from Elizabethtown, Lexington, Corbin, Glasgow, Paducah, Litchfield, Webster, Berry, Defoe, Mayo, Bardwell, Hanson, and Bryanville.

GRANARY WEEVIL (Calendra granaria L.)

South Dakota H. C. Severin (October): The granary weevil is very abundant in many sections of the State.

A SILVERFISH (Lepisma sp.)

North Carolina R. W. Leiby (October 22): Many more complaints than the usual number have been received due to the presence and injury by silverfish in houses. The complaints have extended throughout the summer.

Kentucky W. A. Price (October 24): Silverfish are damaging wall paper at Louisville, Lexington, and Bowling Green.

## PLANT QUARANTINE AND CONTROL ADMINISTRATION

Notes abstracted from the News Letter for September, 1931.  
(No. 10, Issued October 1, 1931.)

Not for publication

### PINK BOLL WORM (Pectinophora gossypiella Saund.)

Within the regulated area 82½ bushels of trash were examined in the Salt River and Gila Valleys of Arizona. The results were all negative. In the Big Bend of Texas the first bale was ginned on August 15, and 39 larvae were taken from three-fourths of a bushel of trash. The second bale was ginned on August 29, and from one-third bushel of trash 353 pink boll worms were taken. On August 31, 471 pink boll worms were taken from 1¼ bushels of trash. This makes a total of 854 specimens taken from 2-1/3 bushels of trash.

The regular weekly infestation counts from 23 selected fields in Maricopa and Pinal Counties, Ariz., were continued throughout the month of August. A total of 23,600 bolls and 5,000 squares were examined; also 1,690 bolls from fields which had been found to be infested during May and June. The results of all the above examinations were negative. In the Tucson area 875 acres were inspected. This makes 2,100 acres which have been covered. There still remain some 400 acres to be inspected, which will complete the entire acreage in this district.

### JAPANESE BEETLE (Popillia japonica Newm.)

For the first time since the Japanese beetle has spread to the blueberry sections of the pine barren region of New Jersey, it has been necessary to fumigate blueberries as a requirement for their certification.

This season's scouting activities in the vicinity of the clay pits centering around New Brunswick, N. J., revealed initial infestations in practically all of those establishments in which Japanese beetles had not heretofore been found.

That Japanese beetles in Connecticut fly high was shown when 69 were collected off the roof of a clubhouse in New London. Report received by one of the men looking after the traps in that city, indicating presence of beetles about the club, led to the search which captured the specimens. Two beetles also were caught in traps placed on the roof of the clubhouse.

### GIPLY MOTH (Porthetria dispar L.)

Eleven regular scouting crews were engaged throughout August inspecting extensive wooded areas in six townships in the Adirondack region of the barrier zone, namely, Chesterfield, Crown Point, Essex, Ticonderoga, Westport, and Willsboro, N. Y. Seven New York Conservation Department crews were scouting in the townships of Canaan, Austerlitz, and Hilldale. No indications of gipsy moth infestations were reported by either Federal or State forces operating in the barrier zone during August.

Four New York State crews were scouting in the township of North Hempstead, Nassau County, Long Island, and have reported the discovery of one infestation, but inasmuch as no clean-up work has yet been done, it is impossible to determine the extent or intensity of this infestation.

#### MEXICAN FRUIT FLY (Anastrepha ludens Loew)

Operation of approximately 1,100 fly traps in the groves on the American side of the Rio Grande resulted in the capture of two specimens of A. pallens Coq. during the month of August. One of these was taken in a grove near Mission on the 11th, and the other was taken in a grove on the outskirts of Brownsville on the 8th. It will be recalled that an adult was taken in a grove south of Mission on July 14. Following the finding of these specimens a thorough examination was made of fruits and berries growing in the Valley in an effort to locate the host food, but all inspections gave negative results.

The operation of 177 traps in 53 premises in Matamoros resulted in the taking of 23 adults. Adults were taken in four premises which had not been previously reported as infested.

Inspection of fruit arriving in the market at Matamoros from points in the interior of Mexico revealed infestations in apples, oranges, peaches, and pears. A total of 45 larvae were taken from these fruits during the month.

#### NARCISSUS BULB FLY (Merodon equestris Fab.)

The Washington inspection house reports an interesting discovery of a larva in a small narcissus bulb (Narcissus bulbocodium conspicuus) not more than 2 cm. in total length. This larva was found in a shipment arriving September 5 from London, England. The occurrence of larvae in such small bulbs is so unusual that photographs have been made of the specimen.



INSECT CONDITIONS IN MEXICO FROM JANUARY TO JUNE 30, 1931.

By Ing. Julio Requielme Inda,  
Chief, Department of Technical Publications,  
Office of Federal Service for the Defense of Agriculture,  
San Jacinto, D. F., Mexico.

In the vicinity of Coatepec, Vera Cruz, there was a notable decrease in the fruit fly Anastrepha ludens Loew on orange. The mango continues to be attacked by this insect, but each time to a less degree. This insect was observed on mango, guava, plum, and orange in Coscomatepec, Vera Cruz. It was common on oranges and custard apples (Annona) in Iguala, Guerrero, at all times but it has not caused as much damage as usual this year on account of careful watch for insects and good cultivation. Observed on orange in Putla, Oaxaca.

Anastrepha striata Schiner is common at all times on guava in Iguala, Guerrero. It has not caused as much damage as usual this year on account of careful watch for insects and good cultivation.

Anastrepha fratercula Wied. was observed attacking a variety of fruits, especially when uncared for, in the vicinity of Merida, Yucatan. Common at all times on Nanche (Brysonima crassifolia) and plum in Iguala, Guerrero. It has not caused so much damage this year as usual on account of careful cultivation and a close lookout for insect pests.

Aleyrodes citri Riley, & Howard was found on leaves of orange in the vicinity of Coatepec, Vera Cruz.

Stephanoderes coffeae Hog. was observed attacking the coffee tree in the vicinity of Coatepec, Vera Cruz.

Dactylopius destructor Comst. was observed attacking the coffee tree in Coatepec, Vera Cruz.

Anthonomus grandis Boh. was common on all Malvaceae grown in the Grigalva River Valley from Chiapa de Corzo to Concordia, Chiapas. It began its depredations in March. It was also present in the vicinity of Acapulco, Guerrero, and was observed in all parts of Oaxaca, where cotton is grown, principally in Santo Domingo during March.

Alabama argillacea Hbn. was observed on cotton in the vicinity of Acapulco, Guerrero.

Diatraea saccharalis Fab. was observed on sugarcane in Iguala, Guerrero.

In the State of Oaxaca, Solenophorus incurrens Gyll. occurs generally on sugarcane the year round, but it does no very considerable damage.

Heilipus lauri Boh. was observed on avocado in March in Santa Ana Tlapacoyan, Oaxaca, and also in Iguala, Guerrero.

Trioza koebelei Kirk. was observed on avocado in Coscomatepec, Vera Cruz.

Rhynchophorus palmarum L. is an endemic species on the Island of Carmen, Campeche, and causes considerable damage to the coconut. Coconut in Iguala, and Acapulco, Guerrero, is attacked by this insect.

Scyphophorus acupunctatus Gyll. is common on the seedlings of Agave in Campeche and does considerable injury, especially to plants in uncared-for nurseries. It is also common in Yucatan.

Azochis grypusalis Walk. was observed on fig trees in February in Iguala, Guerrero.

Toxotrypana curvicauda Gerst. attacked papaya in the State of Oaxaca.

Cosmopolites sordidus Germ. was observed attacking banana in Coscomatepec, Vera Cruz.

There was an abundance of the woolly aphid (Eriosoma lanigerum Hausm.) on apples in Vigas, Vera Cruz.

Heliothis obsoleta Fab. attacked corn from the month of March in Acapulco, Guerrero, and also in the vicinity of Tuxpan, Vera Cruz.

Laphygma sp. We have been informed that some caterpillars, possibly Laphygma sp. and Prodenia sp., are damaging vegetable gardens and fruit trees on the Island of Cozumel, Quitana Roo., but we do not have information as to the amount of injury. L. frugiperda Hbn. attacked corn in Iguala, Guerrero; and in Mazapa de Madero, Mariscal, and Jiquipilas, Chiapas.

Agrotis c-nigrum L. caused considerable damage to young corn in the vicinity of Tuxpan, Vera Cruz. This cutworm attacked corn in March in many parts of the State of Oaxaca.

White grubs (Phyllophaga spp.) attacked corn and broad beans in Vigas, Vera Cruz, and also in Iguala, Guerrero, during February.

Macroductylus sp. attacked growing corn in the vicinity of Tuxpan, Vera Cruz. Corn and broad beans in Vigas, Vera Cruz, were attacked.

The larvae of Lamellicorn beetles, probably Strategus sp., attack corn in Coquematlan and Cucuhtemoc, Colima. Strategus julianus Burm. is very abundant and injurious in Soyalo, Chiapas.

Atta fervens Say is very injurious to oranges in the vicinity of Alvaro Obregon, State of Tabasco. This ant attacks seed corn at planting time in the vicinity of Tuxpan, Vera Cruz. It also attacked various plants in the vicinity of Merida, Yucatan, but did not cause any serious damage. It was noted as attacking corn in Alvarez and Cuauhtemoc, Colima. This ant attacked corn in Iguala, Guerrero, during February.

Epilachna corrupta Muls. has damaged frijoles (beans) in Alvaro Obregon, Tabasco, to the extent of 10 per cent of the crop. In Coahuatlan and Cuauhtemoc, Colima, this insect attacked frijoles. In the State of Oaxaca frijoles were attacked by E. corrupta and also by another species of Epilachna.

Anthrenus eugenii Cano was occasionally observed damaging peppers in Iguala, Guerrero.

Potatoes in Vigas, Veracruz, suffered an attack by Lycophotia margaritosa saucia Hbn. producing a loss of from 8 to 10 per cent of the crop.

Murgantia histrionica Hahn attacked cabbage in the State of Oaxaca.

Melittia satyriniformis Hbn. attacked squash in Iguala, Guerrero, in February.

Heliothis virescens Fab. caused considerable damage to tobacco in Acapulco, Guerrero.



INSECT CONDITIONS IN PORTO RICO DURING SEPTEMBER, 1931

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico

The sugarcane borer (Diatraea saccharalis Fab.) was worse, according to S. C. McCall, local Manager of the United Porto Rican Sugar Company on Vieques Island, on the 1931 crop, a total of about 3,500 acres, than it was during the two previous years. He stated that Japanese cane, usually supposed to be somewhat less infested than other varieties, was the worst infested of all during this past year.

Adults of Dyscinetus barbatus Fab. began appearing again at lights on September 2 at Isabela (G.N.W.).

The yellow sugarcane aphid (Sipha flava Forbes) was reported on September 27 by S. C. McCall to have been absent on Vieques Island during the past year as far as he could observe. Its absence or at least scarcity was probably due to much more than normal rainfall on that Island.

The leafhopper Protalebra brasiliensis De Long, known to be a minor pest of sugarcane, has continued abundant throughout the month on Bidens pilosa at El Morro in San Juan.

The coffee stem borer (Psychonoctua personalis Grote) was received under date of September 29 in injured branches of coffee trees from Corozal with the statement that considerable damage was being done to the trees by the hollowed-out branches being broken off when they were bent down by the pickers.

The coffee leaf miner (Leucoptera coffeella Staint.) was generally distributed and quite abundant on a large coffee farm in the vicinity of Jayuya, visited September 9-10. Apparently not much damage was being done, however, to bearing trees.

The green scale (Coccus viridis Green) was observed September 9-10, to be general, though not very abundant on a large coffee farm near Jayuya, the younger leaves and shoots being more commonly infested as usual.

The coconut scale (Aspidiotus destructor Sign.) was reported by Mende Coconut Specialist at the Insular Station, as being not nearly so abundant at Cabo Rojo during September as it was five or six months ago. As far as could be observed, on September 26 practically every coconut palm on Vieques Island was more or less infested with the coconut scale, those towards the eastern and drier end of the Island especially so, many palms having a sickly and yellow appearance and in some cases even the fruits being almost encrusted with the scales.

A brown aphid was abundant on a number of the tender shoots and young leaves on a fairly large grape arbor at Puerto Real, Vieques Island, on September 28.

Adults of Diuronea spengleri L. were less abundant than a short time ago at Isabela, only one or two egg clusters being found in several hours' search in the citrus nurseries, whereas many were found towards the end of August in the same place in a much shorter time (G.N. Wolcott).

An undetermined snail was reported by T. H. Twait of the Insular Experiment Station as skeletonizing the leaves in a seed-bed of several thousand grapefruits at the experiment farm at Trujillo Alto the last of August. The seedlings were not more than 6 inches in height and were generally infested, about 5 per cent being killed before control measures could be adopted.

The papaya fruit fly (Toxotrypana curvicauda Gerst.) was not found in several fruits cut open on a farm near Ponce on September 9. The owner stated that no infested fruits had been noticed for several weeks, whereas formerly they had been heavily infested. As previously reported, many infested fruits had been destroyed and I suspect that this resulted in greatly reducing the infestation in this planting.

The scale Pseudoparlatoria ostreata Ckll. was abundant on a number of grapefruit trees near Ponce on September 9.

The cassava shoot borer (Lonchaea chalybea Weid.) was received under date of October 2 from the local Agricultural Agent at Bayamon who stated that for some little time the insect had been very common in all the cassava plantings in the district and had considerably reduced the yield.

By the early part of the month most of the cotton had been harvested around Isabela and during the month larvae of the pink boll worm (Pectinophora gossypiella Saund.) were abundant in alternate hosts, especially in the bolls of the maguey tree (Montezuma speciosissima) (G.N.W.).

Only one moth of the bean pod borer (Plutella zinckenella Treit.) was taken during three nights' collecting, September 25-27, at Puerto Real, Vieques Island.

The moths of the bean leaf folder (Macoleia indicata Fab.) were fairly common at light September 25-27 at Puerto Real, Vieques Island.

The bean aphid (Aphis rumicis L.) was found on September 8 in considerable numbers on many of the vines on the patch of pole limas at the Rio Piedras Station; in some cases the long stems of the vines were crowded and there was a light to moderate infestation on many leaves.



The bean lacebug (Corythucha gossypii Fab.) was present in abundance September 8 at the Station. The insect was observed in moderate numbers on a number of castor bean plants in different parts of the Island, September 26 - 28.

A mealybug, Pseudococcus sp., was found September 8 generally though lightly distributed throughout a fair-sized patch of pole limas at the Station on both leaves and stems.

Moths of the melon worm (Dianthia hyalinata L.) were fairly common at light during three nights' collecting, September 25 - 27, at Puerto Real, Vieques Island.

The small black squash bug (Pycnoderes incurvus Dist.) was fairly common at light during three nights' collecting, September 25- 27, at Puerto Real, Vieques Island.

The Hawaiian beet webworm (Hymenia fascialis Cramer) continued to be abundant throughout the month on the weed Gonohraena dispersa at El Morro in San Juan.

Grasshoppers did considerable injury to several large tomato plants grown for experimental purposes in the greenhouse at the Rio Piedras Station during the latter part of the month. The injury was by young green nymphs. Adults have not as yet been obtained.

Adults of the sweetpotato weevil (Cylas formicarius Fab.) were not uncommon during three nights' collecting at light at Puerto Real, Vieques Island, September 25 - 27. Arturo Riollano, the local Agricultural Agent, stated that he had observed the insect as generally distributed and very injurious since he had been on the Island from September, 1930.

The corn ear worm (Heliothis obsoleta Fab.) infested practically every ear of sweet corn at Isabela during the month (G.N.W.).

was received

A leaf beetle, Metachroma antennalis Weise/ from the Aguirre Sugar Company was received under date of September 4 for determination. The beetles were said to be present in enormous numbers and doing great damage to rose bushes. Out of over 1,000 good-sized rose bushes over 400 had been killed, the beetles first eating the flowers, next the leaves, and finally gnawing off the bark of the woody parts. The beetles first appeared in the spring of 1929 and were present the following year and this year from April into September. It was stated that when disturbed the beetles drop readily. This species was originally described from Porto Rico in 1885 by J. Weise and has apparently not been reported outside of the Island. Here it has been recorded as rather badly attacking cotton at Quebradillas in June, 1922, and was found between leaves and in spider nests on various plants on the beach at Arecibo in May, 1923.



The chinch bug, Blissus leucopterus Say, was reported by A. J. Harvey (who submitted specimens for determination) as causing severe damage in a large pasture of molasses or "malojillo" grass at Santurce on September 12, many large areas having been killed out. Mr. Harvey also stated that he had recently observed similar injury in a large pasture of the same grass a little east of Carolina.

A horn fly (Haematobia irritans L.) was observed to be very abundant on all the oxen in Vieques Island on September 26-28, and S. C. McCall stated that it had been worse this year than usual. One bull was reported covered with flies and in a greatly weakened condition if indeed not dying. The considerably more than normal rainfall may be partially responsible but in Porto Rico the pest is ordinarily worse on the South Coast which has considerably less rainfall than the North Coast.

The bostrychid beetle Rhizonertha dominica Fab. (R. pusilla Fab. A. J. Mutchler det.) according to Dr. Wm. A. Hoffman of the School of Tropical Medicine in San Juan, has been a bad pest in the books in the library for the past two years.

#### INSECT CONDITIONS IN HAITI DURING JULY, 1931

Dr. J. G. Myers

Imperial Institute of Entomology

Trinidad, B. W. I.

The sugarcane butterfly (Calisto pulchellus Lathy) was observed on July 29 heavily infesting about three acres of sugarcane in a very damp situation near Cape Haiti in Limbe Valley. Almost every leaf was more or less eaten by the caterpillars.

The brown ant Solenopsis geninata Fab. was observed on July 31 to have killed about 20 per cent of the young grapefruit trees (planted in January) on 200 acres at Cape Haiti by ringing the bark at the base.

An undetermined mirid (reddish adults) was observed on July 29 injuring a small patch of upland rice between Cape Haiti and Limbe. The bug was abundant in spots, causing a yellowish or whitish mottling of the leaves, and the infested patches were considerably stunted. The same insect was also present in two other localities far from rice, on the grass Paspalum distichum, which is probably its natural food plant.

A black and spiny pentatomid bug was present and breeding on a small patch of upland rice between Cape Haiti and Limbe.

INSECT CONDITIONS IN THE DOMINICAN REPUBLIC DURING SEPTEMBER, 1931

Juan Gomez Menor

Entomologist of the Agricultural Experiment Station, Moca, Dominican Republic

Blissus leucopterus Say is very rare and only found on sugarcane.

White grubs (Phyllophaga spp.) are very seriously damaging the roots of coffee at Samana.

The corn lantern fly (Perezgrinus maidis Ashm.) is very injurious to rice in the northern part of the Republic.

Rice is infested by the ortolid Euxesta annonae Fab. which produces a stem rot by admitting bacteria.

Rice roots were attacked by Pseudococcus sp.

Mormidea ypsilon L. produced "empty grain" in rice.

Ischnorhynchus championi Distant is injurious to cotton at Bonao and Moca.

Lepidosaphes gloverii Pack. is present but scarce on citrus at Moca and Samana.

Toxoptera aurantii Boyer was found on the leaves of Citrus bigaradia, C. decumana, and other species. It is controlled to some extent by the fungus Acrostalagmus aphidum.

Homoledra sabalella Cham. is very abundant on coconut palm and Orcodox caribea at Moca and Santiago but very scarce in Samana.

Coconut is severely infested by scale, Aspidiotus perniciosus Const., in Samana. This scale is slightly checked by Saccus panamensis Gorham, Aspidiotiphagus citrinus Crawford, and Aphelinus chrysomphali Mercet.

Coconut is also infested in a minor way by Ischnaspis longirostris Sign., Diaspis boisduvali Sign., and Pseudococcus nipae Masl. in Samana.

The green scale, Coccus viridis Green, is very abundant on Coffee and Psidium guava, but is well controlled by the fungus Cenhalosporium lecanii.

The moth Erinnyis ello L. is very common on manihot (cassava). The larvae are parasitized by Apanteles flaviventris Cress. and the eggs by Trichogramma sp.

The Cuban-laurel thrips (Gynaikothrips uzeli Zimm.) was very numerous on Ficus nitida at Bani, San Jose de Ocoa, and Moca.

Ornenis sp. is injurious to Cinnamomum ceylandicum in Jamao.

Constockiella sabalis Const. is very abundant on Sabal dominguensis and other palms at Hato de Yaque and San Francisco de Macoris.

Asterolecanium lanceolatum Green was attacking leaves and stems of Bambusa sp. in Samana.

Asterolecanium bambusae Bdv. was found on the leaves and stems of Bambusa in Moca.

The San Jose scale (Aspidiotus perniciosus Const.) is attacking papaya and guava in Samana.

Corizus hyalinus Fab. was found attacking tomato at Moca.

The deer fly Chrysops costatus Fab. is very troublesome to man and horses in wet places in Samana and Moca.

Solenopotes capillatus Enderlein is very abundant on cattle in Bonao.

The biting goat louse (Bovicola caprae Gurlt.) is prevalent on goats throughout the Republic.

The hog louse (Haematopinus suis L.) is very numerous in Moca Bani.

Gliricola distincta Ewing is found on guinea pigs.

The small body hen louse (Menopon pallidum Nitz.) is very prevalent on domestic poultry throughout the Republic.

Columbicola columbae L. was found infesting pigeons in Santo Domingo City.





# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

Summary for 1931

Number 10

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





# INSECT PEST SURVEY BULLETIN

---

Vol. 11

Summary for 1931

No. 10

---

## INTRODUCTION

The outstanding features of the weather during 1931 were abnormally high temperatures nearly all year; a disastrously hot and dry growing season in the northern plains; and variable rainfall, somewhat scarce but sufficient for crop production, over most of the country.

The winter months early in 1931 were warmer than normal over practically the entire country. In the northern plains the excess in average temperature amounted to about 20 degrees, growing less southward and eastward. Rainfall was well below normal in most places.

The spring months were nearer normal, being warmer than usual west of the Rockies and in the extreme Northern States, and cooler over the rest of the country. Precipitation was quite variable and somewhat below normal in most places. The shortage was serious in the northern plains, but rainfall was sufficient for crops in most other sections.

The summer months averaged above normal all over the country. The excess in temperature was very unusual over a wide area in the northern plains and North Central States, especially in early summer. Many crops were injured by sudden and severe heat late in June in the Mississippi Valley. Summer rainfall was much like that of the spring, being variable, rather scanty in most places, sufficiently well-timed to allow normal crop production in much of the country, but injuriously short in the northern plains and near-by areas.

The features of the fall and early winter have been high temperatures throughout, and considerable precipitation late in the period. Uncomfortable heat persisted unusually late into the fall in the Central and Eastern States and moisture was scanty in many places. Snows in the Rocky Mountain region, and abundant or in places excessive rains over much of the country, with very little severe cold, featured late fall.

## GRASSHOPPERS

In late January and early February, reports of the appearance of grasshoppers were received from Missouri and South Dakota. These, however, were but the overwintering nymphs of economically unimportant species brought out by the very unseasonably warm weather. During the first week in May, grasshopper eggs began hatching in Montana and by the third week hatching was reported from the Great Plains. During the latter part of May, outbreaks were under way in the Klamath Lake and Antelope Valley districts of California and Oregon and the Salt River Valley of Arizona. During June, outbreaks in the Great Plains States, southward to northern Kansas, had developed to such an extent as to require drastic control measures. In the three northwestern counties of Kansas (Cheyenne, Thomas, and Sherman) grasshoppers were so numerous as to require the application of over a million pounds of poisoned bait for their control, and at this time the outbreak in Klamath and Lake Counties of Oregon was of such proportions that 25,000 pounds of bran mash was being distributed daily to hold the insects in check. In July the outbreak in the Great Plains reached such proportions that it was recognized as a regional calamity and was said to have been the most serious of any grasshopper outbreak since the early settlers were demoralized by the invasion of the Rocky Mountain locust in the decade between 1868 and 1878. During this month more or less serious trouble was reported from New York westward to Idaho, Nevada, and Arizona, and southward to Arkansas, Oklahoma, and Texas. The region of practically complete crop destruction extended from Sully and Stanley Counties in central South Dakota, south-eastward to the Nebraska State line, extending into the northern part of Nebraska in Keyapaha and Boyd Counties. Very severe damage, although not so complete, surrounded this area, extending northward into North Dakota and the northwestern corner of Minnesota, westward to Montana and north-eastern Wyoming, across Nebraska into the northeastern corner of Colorado, southward into northern Kansas and west-central Missouri, and eastward into central Iowa. Another very badly infested area was that in northern California and southern Oregon, centering around Klamath Lake. Species most seriously involved in the Plains region were Melanoplus bivittatus Say, M. differentialis Thos., M. mexicanus Sauss., M. femur-rubrum DeG., and Camnula pellucida Scudd. The trouble continued throughout most of August and September. Toward the end of the latter month egg laying started and the depredations were practically completed.

## CUTWORMS

The very warm weather of late January and early February resulted in the early appearance of cutworms (Noctuidae) in the lower Mississippi Valley and the Pacific Northwest. As the spring advanced reports of damage were received from practically all parts of the United States, the damage being particularly noticeable in the South Atlantic and Great Plains States. During June the variegated cutworm (Lycophotia margaritosa saucia Hbn.) became very destructive in the West Central States over an area extending from southern Nebraska, across Kansas, into Oklahoma and Arkansas. These outbreaks were followed in July by similar outbreaks in the North Central







States. Other species involved in the cutworm troubles of this year were Agrotis ypsilon Rott., A. c-nigrum L., A. unicolor Walk., Barathra configurata Walk., Chorizagrotis auxiliaris Grote, Euxoa sp., Neuphelodes emmedonia Cran., Polia renigera Steph., Prodenia ornithogalli Guen., and Feltia gladiaria Morr. The outbreaks in the West Central States were particularly serious, as they immediately preceded the very serious grasshopper invasion in this general region.

#### WHITE GRUBS

The first adult June beetles (Phyllophaga spp.) reported by our collaborators were observed on April 14 in west-central Illinois. During the latter half of April reports of damage were received from South Dakota southward to Kansas and Missouri. On April 23 very heavy flights of the beetles were observed in Louisiana. Damage to pecan foliage by the feeding of the beetles was reported by the middle of the month from Mississippi. During the latter half of May many complaints of damage, particularly to sod and tobacco, were received from Connecticut and Massachusetts. During the last week of the month heavy flights of beetles were observed in Pennsylvania. Throughout the entire month the beetles were observed in the South Atlantic States in noticeable numbers. In the East Central States many complaints were received, and by the end of May these insects were attracting major attention by feeding on the leaves of fruit trees and ornamentals. In the West Central States the main brood of adults is due to appear in 1932. Despite this fact, very heavy flights were observed in 1931 from the middle of April on. It was estimated that as high as 40,000 adults per acre were present in pastures in the generally infested territory of southwestern Wisconsin. Heavy flights of beetles were reported from the East Central, West Central, and North Central States during June. The roots of azalea bushes at Mobile, Ala., were eaten away by the grubs during the summer. Damage to seedlings of pine was reported from nurseries at Senter, S. C., and at the State nurseries in North Carolina.

#### WIREWORMS

The warm spell in February resulted in bringing wireworms into activity in Kansas. By mid-April the sand wireworm (Horistonotus uhleri Horn) was observed to be active in southwestern South Carolina, and by late May this insect was damaging cotton and corn in that region. In the New England and Middle Atlantic States, from Maine and Vermont southward through New York to Maryland, the wheat wireworm (Agriotes mancus Say) and another species, Phalotes agonus Say, were reported during late May and early June damaging potatoes, seedling melons, corn, and several other crops. During May reports of damage to recently set tobacco plants and seedling melons by the wireworm Monocrepidius vespertinus Say were received from North Carolina. Throughout late April, May, and early June reports of wireworm injury occasioned by several species of wireworms, among which might be mentioned Melanotus spp., Monocrepidius auritus Hbst., Aeolus dorsalis Say, and Agriotes mancus Say, were quite general over the East Central and North Central States, with scattered reports of wireworm damage from the Rocky Mountain, Great Basin, and Southern States.

"During the year 1931, the newly introduced wireworm Heteroderes laurentii Guer. has proven quite an economic pest in the trucking section of southern Alabama. The early Irish potato crop, particularly, suffered severe injury. A great percentage of this crop was loaded for market with shipping point certification by the Bureau of Markets. Their reports showed injury as high as 25 per cent to many cars of Irish potatoes. From 3 to 5 per cent was quite common during the main portion of the shipping season. Other crops were also damaged. Both larvae and adults were found very numerous in Mobile and Baldwin Counties, Ala. Many fields show a population of as many as 10 larvae to the square foot. During the year scouting has shown the distribution of the insect at this time as follows: Harrison, Jackson, George, and Green Counties, Miss.; Mobile, Baldwin, Washington, and Escambia Counties, Ala.; Escambia and Santa Rosa Counties, Fla. Larvae, tentatively identified as this species, have also been collected in Walton, Jackson, and Holmes Counties, Fla." 1

#### EUROPEAN CORN BORER

The European corn borer (Pyrausta nubilalis Hbn.) made but slight advance along its western border. Toward the southeast the advance was more pronounced. Practically all of southeastern New Jersey is now known to be infested, and infestations have been found on the Eastern Shore of Virginia. This insect was also found in a single township in Sheboygan County, Wis.

#### HESSIAN FLY 2

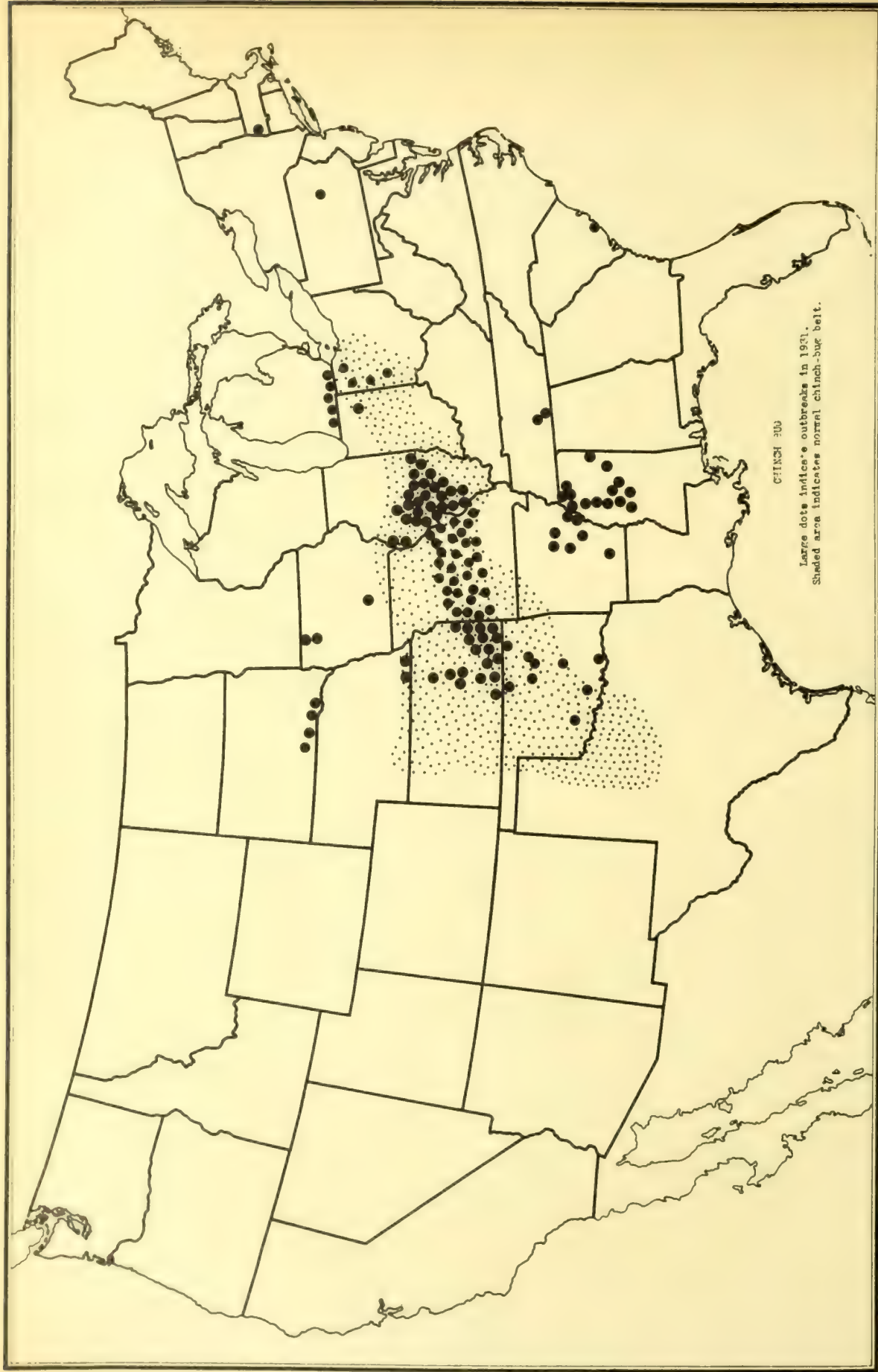
During the early spring months, reports of rather heavy infestations by the Hessian fly (Phytophaga destructor Say) were received from western and southeastern Iowa, while the insect was reported at this time as being comparatively scarce in the Atlantic States. As the spring advanced serious infestations were reported from western Illinois and parts of the Platte Valley in Nebraska. In Henderson County, Ill., considerable wheat areas were plowed out, since infestations in this region ran from 32 to 40 per cent of the tillers. The spring wheat in the Willamette Valley of Oregon was also reported as quite heavily infested this year. At harvest time it was observed that the insect was low in numbers in the East Central States, with serious infestations in western and southern Illinois, southern Indiana, and scattered localities in Nebraska and Kansas. The summer wheat-stubble surveys showed that in west-central and southern Illinois the infestations were decidedly heavy, running from 5 to 37 per cent. The State average, however, was lower than last year, being 9 per cent as compared with 13 per cent. Similar surveys in Kansas show infestations in the eastern two-thirds of the State of from 10 to 15 per cent of the plants.

1 K. L. Cockerham, Bureau of Entomology, U. S. D. A.

2 Revised and amplified by C. M. Packard.







CHINCH BUG

Large dots indicate outbreaks in 1931.  
Shaded area indicates normal chinch-bug belt.

During September considerable emergence of the fly occurred in the East Central States. In most places, however, this emergence was too early to infest the sown wheat, but volunteer wheat in this region was heavily infested and became an important source of flies infesting sown wheat in early October. Owing to unusually favorable fall weather, oviposition continued later than usual in Illinois and Indiana. Heavy fall infestations developed in many of the earlier sowings in these States. In Ohio the fly appeared to be somewhat more generally present in significant numbers than a year ago, though the infestation averaged low. It was also light in southern Michigan. Drought during September and October in Kentucky and Tennessee curtailed fall fly activity and early wheat sowing. As a result of late fall rains and persistently mild weather, however, light infestations developed successfully during November in some Kentucky and Tennessee fields. Fall infestations were reported heavy in the earlier sowings in central and southeastern Missouri and southeastern Nebraska, and moderately heavy in north-central and northeastern Kansas, and in western Iowa, particularly in Monona County. In the remainder of the West Central States the fly was less abundant.

#### CHINCH BUG

Early spring observations in the East Central States indicated that the winter mortality of the chinch bug (Blissus leucopterus Say) had been very low and presaged possible trouble from eastern Kansas to northwestern Ohio. During the middle of April the bug started migrating into small grain in Illinois, Missouri, and Kansas, with indications of possible serious damage in southeastern Kansas. By the middle of May the insect was appearing in threatening numbers in south-central Illinois, western Missouri, southeastern Kansas, and northeastern Oklahoma, with rather large numbers appearing in scattered localities in Mississippi. By the end of June young bugs were appearing in western Ohio, central and southern Illinois, and central and western Missouri. During July damage to corn was reported from several western and northern counties in Ohio, from south-central and central Illinois, and from one locality in northeastern Indiana. During the early part of July these insects were observed to be maintaining large populations in Iowa, southern South Dakota, and southwestern Nebraska. The damage on the whole, however, was not so serious as was anticipated. During the latter part of the summer the chinch bug populations survived in such numbers as to indicate the possibility of damaging infestations next year over the normal chinch-bug belt, which extends diagonally from the eastern one-third of Kansas across central Missouri, south-central Illinois, and central Indiana, and into northeastern Ohio. Sporadic outbreaks occurred this year in Massachusetts, where this insect was very numerous over a small area in Berkshire County; considerable injury was caused in Lincoln and Marshall Counties, Tenn., and in many localities scattered throughout Mississippi; in Charleston, S. C., where there was quite a little damage to St. Augustine grass; and Columbia County in east-central Pennsylvania, where the damage was to Sudan grass, corn, and oats. Specimens were received from Glen Cove, Long Island, N. Y., where they were damaging lawns.



## GRAIN APHIDS

Only a single report on the green bug (Toxoptera graminum Rond.) was received during the year, this coming from Holt County, Nebr., about the middle of May. Several reports of damage by the English grain aphid (Macrosiphum granarium Kby.), however, were received from the East Central States, particularly from Indiana and Michigan.

## CORN EAR WORM

The first report on the corn ear worm (Heliothis obsoleta Fab.) for this year was received on February 10 when eggs were observed in Galveston County, Tex. On March 2 two larvae were found at the same place. Last year the first eggs were observed March 27 at College Station, Tex., indicating a difference of five weeks in the advance of this season over last. By the last week in May larvae were observed injuring buds and tassels of corn in South Carolina. Toward the end of the month damage was becoming conspicuous on tomatoes and corn throughout the Gulf region. During the first week in June this insect became seriously abundant in the sweet corn growing section around Foley, Ala., injury running as high as 5 per cent of the ears infested. Similar reports of damage about this time were received from Mississippi and Louisiana. Adult moths, eggs, and newly hatched larvae were starting to appear as far north as Maryland and Nebraska by the middle of June. Early in July damage to early tomatoes and sweet corn plants were received from Ohio, Illinois, westward to South Dakota and Nebraska, and southward to the Gulf. Owing to the early appearance of this insect in the upper part of its range, ears had not yet formed on corn plants and the damage was very conspicuous in the cornstalks. This occasioned considerable alarm in the region west of that known to be infested by the European corn borer, the corn ear worms being mistaken for the introduced pest. An unusual type of injury was observed in Kansas, where the larvae originally infesting a cover crop of hairy vetch attacked the fruit in an apple orchard as high as 6 or 8 feet above the ground, much of the fruit being entirely eaten out, leaving the empty skins hanging to the tree. The damage was particularly severe in low-headed trees where branches touched the vetch. As the summer advanced it became apparent that in the Middle Atlantic, East Central, North Central, and West Central States, damage was decidedly severe, although probably not unprecedented. During the fall months reports of injury throughout New England indicated that this insect was more prevalent in that section than it had been in the preceding ten years.

## FALL ARMYWORM

During July the fall armyworm (Laphygna frugiperda S. & A.) developed a typical outbreak in the Everglades district of Florida, extending as far northward as Pinellas and Polk Counties. Light infestations about Baton Rouge Parish in Louisiana were reported in July; these, however, undoubtedly had been under way during late June, as the larvae were mature and many had entered the ground at the time of observation, July 17. During July

very severe damage to sweet corn in the Tia Juana Valley of California was reported, and similar reports were received from parts of Los Angeles County. Here late sweet corn was almost entirely ruined and the tonnage of field corn was severely reduced. By early fall this insect was troublesome as far north as Monterey County, Calif., attacking lettuce and tomatoes. As a whole, however, the year was not one of phenomenal damage by this insect.

#### ARMYWORM

During April moths of the armyworm (Cirphis unipuncta Haw.) were collected in large numbers in bait pans in New Mexico. About the middle of May an outbreak developed in 11 counties in north-central Texas and similar outbreaks developed in several Delta counties in Mississippi. Much smaller and localized outbreaks were also reported during the month from Arkansas, Virginia, and West Virginia. During June areas of serious damage were reported from the East Central States westward to Nebraska and southward to Kentucky and Tennessee, Arkansas, and Mississippi. This insect also appeared in destructive numbers in northern Utah. Several local outbreaks occurred in eastern North Carolina. Throughout the South Atlantic and East Central States the first generation was very highly parasitized and little trouble was experienced with the second brood. During July the insect appeared throughout the greater part of Michigan, although it occasioned no serious damage.

#### SOD WEBWORMS

During June we began to receive reports of very unusual damage by sod webworms (Crambus spp.) to sod lands, corn, and tobacco in the East Central States extending from Ohio to Iowa and southward to Kentucky. Between June 2 and June 10 a heavy flight of the moths of Crambus trisectus Walk. was observed in western Illinois. A somewhat heavy flight of Crambus spp. was observed at Lexington, Ky., during late June. Heavy flights were also observed in Ohio between June 10 and 29, and again between August 15 and " . 22; the species in this case were C. trisectus Walk. and C. teterrellus Zinck. The moths were so numerous that they covered the radiators, headlights, and windshields of automobiles, making driving difficult. Almost every golf course in the City of Columbus showed large brown patches due to the feeding of the webworms. The damage continued well through July. Similar damage to golf courses, particularly putting greens, was reported from Indiana. In Kentucky it was estimated that about one-half of the lawns in the bluegrass section were ruined by the feeding of these insects during June, the damage being particularly noticeable in the immediate vicinity of electric lights to which the moths were attracted and near which they laid eggs. Considerable damage to lawns was also reported from Iowa and Missouri. In one 60-acre cornfield in Tennessee 30 acres were practically destroyed, there being from 3 to 5 larvae per hill. At Windsor, Conn., a tobacco plantation was very severely infested, this being the first record of damage to the tobacco crop that has been observed in that State.



## SUGARCANE BORER 1

The infestation in 1931 by the sugarcane moth borer (Diatraea saccharalis Fab.) was rather unusual. After the mild winter of 1930-31, this pest showed every sign of a rapid development and a heavy infestation. A cool spring, however, delayed the development, and for a while it seemed that the infestation would be very slight. The cool spring was followed by a hot summer, and the infestation increased rapidly. The final status was determined as usual during the "grinding season," in the fall, and it was then found that the infestation was very spotted, ranging from practically nothing in some fields (1 per cent of the stalks bored) to every stalk bored in other fields. Ninety-one fields, fairly well distributed over the "sugar parishes" of Louisiana, were inspected, and the average stalk infestation was found to be 55.6 per cent. The joint infestation varied, accordingly, from practically no damage to serious damage. A noteworthy finding was the scarcity of the egg parasite Trichogramma minutum Riley. Even during the "grinding season," when practically all the eggs are usually parasitized, many heavily infested fields seemed to have none of these parasites.

## TIGER MOTHS

An unusual and very severe attack of one of the tiger moths (Anantesis phyllira Drury) was reported during April and May from south-central Tennessee. In Lincoln County alone it was estimated that 500 acres of corn were destroyed and many pastures completely stripped of vegetation. The 1st adults of this brood were seen in the field on June 5. On June 23, what appeared to be second-brood larvae were observed in this region. By July 15 most of the larvae had pupated and moths appeared from July 7 to 27. Second-brood larvae did very considerable damage in Christian and Todd Counties, Ky., and Montgomery and Robertson Counties, Tenn. During August third-brood larvae appeared and the first pupae of this brood were taken in the field August 28 in Marshall County, Tenn. On September 24, what appeared to be fourth-brood larvae were observed in the vicinity of Clarksville in northern Tennessee. S. A. Forbes gave the distribution of A. phyllira as extending from Canada and Michigan on the north, westward to Colorado and Texas, and apparently southward to the Gulf, and stated that it is but two-brooded, the broods appearing in May and July. In the Survey files we have records of this insect in past years attacking tobacco in Florida and cotton in Mississippi, and collection records of the insect from Connecticut and New Jersey. A. rectilinea French was also involved in the outbreak, this species also being reported abundant in eastern Tennessee. We have no records on the further distribution of A. rectilinea.

## VELVETBEAN CATERPILLAR

The velvetbean caterpillar (Anticarsia gemmatilis Hbn.) appeared in the Everglades of Florida on June 10, about two weeks earlier than it did



in 1930. Associated with this outbreak was a very marked increase of percentage of parasitism compared with last year. During September there was some stripping of soybeans in southern Louisiana and slight feeding on this crop in parts of Oklahoma. As a whole, the season was one of comparatively slight damage by this insect.

#### A BRUCHID

During June Mr. L. J. Bottiner, of the entomological section of the Food and Drug Administration, collected a large number of specimens of Bruchus brachialis Fabricius from a patch of vetch at Haddon Heights, N. J. This species has also been found in infested vetch pods at Moorestown, Vincentown, Four Mile, and Newtonville, N. J.; Kent County, Del.; and Wicomico County, Md. This bruchid is one of the important bean weevils known to attack vetch in Europe. It is apparently the first of these to become established in the United States.

#### CODLING MOTH

During the very early spring reports were received of low winter mortality of the codling moth (Carpocapsa pomonella L.) from the New England, Middle Atlantic, South Atlantic, and southern part of the East Central States. Throughout the Middle Atlantic and South Atlantic States this insect appeared to be normally abundant. The first observation of pupation was reported March 30 from South Carolina, April 3 from Missouri, April 15 from Georgia, April 12 from southern Illinois, April 14 from central Illinois, April 13 from Nebraska, and April 21 from Pennsylvania and Maryland. In the Rocky Mountain States the insect was reported as quite generally abundant and eggs sustained but slight winter mortality. During the latter half of May adults began emerging in the Middle Atlantic States; in the southern part of this section the emergence was considerably later than last year. In the East Central States emergence occurred at about the same time as it did last year. In the Pacific Northwest emergence occurred during the first week in May, while in California the peak of emergence in the Antelope Valley was reached on April 10. The first side-worm injury was reported from Massachusetts on June 15. About this time eggs were reported hatching in the Hudson River Valley in New York, and by the third week of June they were hatching in numbers in western New York. Side-worm injury had started in southern New Jersey by June 9; and by the end of June unusually heavy infestations were being reported from the Hudson River Valley of New York southward to Georgia, with similar heavy infestations over the greater part of the East Central States westward to Nebraska and Kansas. Band counts made in western Illinois during July indicated that the population was ten times as great as it was at the same time last year, and in eastern Illinois about 25 times as great. In the Pacific Northwest the situation was more serious than it has been for several years.

## ORIENTAL FRUIT MOTH

Early in March adults of the oriental fruit moth (Laspeyresia molesta Busck) were emerging in outdoor cages in South Carolina, and by the end of that month approximately 7 per cent. of the overwintering larvae had pupated at Thomaston, Ga. From Virginia northward no pupation had taken place during March. In the lower part of the Middle Atlantic States it appeared that this insect passed the winter in slightly more than normal numbers. In New Jersey, however, mortality seems to have been heavy, particularly in the Moorestown area. Early in April moths commenced to appear in the bait traps about Cornelia, Ga., by the middle of the month emergence was taking place in southern Virginia, and by the 18th adults were emerging in Delaware. Early in May eggs were found on trees as far north as New Haven, Conn. Injury became noticeable in the South Atlantic States and the lower part of the East Central States during May; and early in June twig injury was observed in Massachusetts, Indiana, and Illinois. On the whole, however, the infestation during the spring of 1931 was decidedly less than during 1930, and as the season advanced this condition seemed to be quite general throughout the range of this insect. In the Georgia peach belt the infestation of fruit ran from 1 to 3 per cent; in southern Illinois there seemed to be a slight increase in infestation, in a few cases from 6 to 10 per cent of the fruit on unsprayed trees being wormy. During late August a heavy infestation was reported from Bent County, Ark., and but for a single record in Dallas County, Tex., this is the westernmost record we have for the distribution of this insect. Very late varieties of peaches were severely damaged in northern Ohio, the Lemon Free being about 50 per cent infested, and such varieties were also damaged in Delaware. As a whole, however, this insect was decidedly less troublesome than it had been in previous years.

## PEACH BORER

In the South Atlantic States the peach borer (Aegeria exitiosa Say) was not abnormally abundant, although considerable damage was done where treatment had been neglected. Reports from Ohio indicate that in that region this insect attracted considerable attention and seemed to be more prevalent than it had been for a number of years. The insect not only damaged peach, but also cherry and plum. In the East Central States the first adult emergence was observed June 11 in Tennessee, 10 days earlier than emergence at the same place in 1930. In Georgia the first pupation this year was observed at Fort Valley on July 14, and the first adults emerged on August 3, which is later than usual, as the first adult in 1930 emerged July 22. Despite the advance in the date of first emergence, the peak of emergence this year in Tennessee was not reached until August 28, while in 1930 this peak was reached on August 13. In the Fort Valley section of Georgia the peak of emergence was reached on September 11. An unusual observation on the life history was made by Mr. O. I. Snapp, at Fort Valley, Ga., where eggs under field conditions were laid as late as November 8 and hatched as late as December 1. The larvae which hatched that day were as healthy as any reared during the season and they readily entered the peach trees.



## PLUM CURCULIO

Adults of the plum curculio (Conotrachelus nenuphar Hbst.) emerged from hibernation in the South Atlantic States much later than usual as compared with the stage of fruit development. Cool weather prevailed from the time of blooming from March 1 up to the third week in that month, holding the insect in hibernation. The first overwintering adult to be observed in the field was collected at Thomaston, Ga., on March 25. This is about a week later than the first curculio was collected at this place in 1930. By March 25, 1930, approximately 1,000 adults had been collected by jarring from the same orchard from which the single individual was taken this year. By the first week of April adults were observed in North Carolina, by the second week they were observed in Virginia, and by the third week in central New Jersey. In the Fort Valley section of Georgia oviposition started later than it did in 1930. This year the first eggs were found on April 11, while last year they were found April 20; the latter date is decidedly later than normal. During May the insect was being reported from New England and the Middle Atlantic States as abnormally abundant. On the other hand, in Georgia the infestation was the lightest that had been observed in 13 years. In the Hudson River Valley and central New Jersey damage became quite severe during July. Throughout the East Central States the infestations as a whole were low, but little damage being done. As the season advanced some late damage was reported from the States immediately west of the Alleghenies, but on the whole the only region suffering serious damage from this insect was that extending from central New Jersey up the Hudson River Valley and into New England.

## SHOT-HOLE BORER

As was to be expected, following the very severe drought which occurred over a very large part of the country during the summer of 1930, an unusually large number of reports of damage by the shot-hole borer (Scolytus rugulosus Ratz.) were received this year from regions extending from New York and Michigan down the Ohio River Valley and along the western Appalachians through Kentucky to Alabama and Mississippi. Associated with a very dry season, this insect has been more destructive than usual in California, damage being particularly severe on prunes.

## FRUIT APHIDS

Observations made during the late winter of 1930-31 indicated that eggs of the rosy apple aphid (Anuraphis roseus Baker) were abnormally scarce through the New England, Middle Atlantic, South Atlantic, and East Central States. However, in Pennsylvania there seemed to be enough eggs to occasion some apprehension. The apple aphid (Aphis pomi DeG.) was quite generally reported as scarce, as was also the apple grain aphid (Rhopalosiphum prunifoliae Fitch). The lower Mississippi Valley reports of deciduous fruit aphids indicated that these insects were unusually abundant. By the middle of April both species became very abundant in central New York. During May the situation changed but slightly; both increased toward the end of the month. Early in June the rosy apple aphid suddenly developed to serious proportions in southern New England and the



Southern States extending westward to Arkansas, and very heavy infestations were also reported that month from the Pacific Northwest. By the middle of the month, however, the outbreak subsided. The apple aphid increased to destructive proportions during July in the Hudson River Valley of New York and northern New Jersey westward to central Pennsylvania. During July the woolly apple aphid (Eriosoma lanigera Hausn.) rapidly increased to destructive abundance in the Wenatchee Valley of Washington, and by August 1 had developed to the most serious outbreak that they had experienced in that region in the last decade. This insect persisted in the orchards of western Washington throughout the summer.

#### LEAFHOPPERS

Early in the season leafhoppers (Cicadellidae) became very abundant in the New England and East Central States and as far west as Missouri. By the middle of May much mottling of foliage was observed through New England and the Hudson River Valley of New York, southward to North Carolina. This condition persisted throughout the summer with a rapid increase in numbers and destructiveness during September, reports of damage extending from the New England States southward to Georgia and westward to Oklahoma. These insects were so prevalent at harvest time over much of this territory that, in addition to the damage done to the fruit, they were decidedly a nuisance to the pickers.

#### SAN JOSE SCALE

Early spring observations indicated that the San Jose scale (Aspidiotus perniciosus Comst.) was on the increase along the Atlantic seaboard from Pennsylvania to Georgia and westward over the Gulf region. A very high winter survival was reported from central Illinois, the number of scales surviving running from 60 to 71 per cent of the total population, while the normal survival in this district is from 25 to 30 per cent. Similar reports of low winter mortality came from the Great Basin region. While this insect has been confined to less than a dozen counties in Wisconsin it has not until recently been found in farm orchards; it has been spreading rapidly and a dozen new localities have been added to the known infested area during the past year. A very late observation by O. I. Snapp at Fort Valley, Ga., indicates that the percentage of live scale on peach trees is unusually high for this time (December 18) running from 85 to 95 per cent.

#### FRUIT MITES

The European red mite (Paratetranychus pilosus Can. & Fanz.) was generally reported as unusually abundant throughout the New England States and very scarce throughout the Middle Atlantic States. Eggs were reported as hatching in Vermont and New York during the third week in April, and during the first week in May in the Middle Atlantic States. A heavy outbreak of the six-spotted mite (Tetranychus sexmaculatus Riley) occurred over the entire citrus belt of Florida during April. This outbreak suddenly subsided in May. The pest was believed to have been controlled by

a fungus disease. The Pacific red spider (Tetranychus pacificus McG.) did damage to certain varieties of grapes in the San Joaquin Valley of California, being one of the outstanding pests in that section this year. A European species of mite (Phyllocoptes fockeui Nal. & Tr.) was discovered this spring attacking the leaves of prune trees in southern Idaho. These mites produced a decided russetting of the foliage. The insect was quite abundant and is apparently the cause of a type of injury which has been very severe in recent years. As far as we can ascertain, this species has not been previously recorded from the United States, but was collected on plums in the vineyard district of Ontario in 1928 (Can. Ins. Pest Review, Vol. 6, No. 5, October 5, 1928). Although a gall mite, this species does not appear to produce galls or blisters.

#### CITROPHILUS MEALYBUG

Control of the citrophilus mealybug (Pseudococcus gahani Green) by the coccinellid Cryptolaemus montrouzieri Muls. and the hymenopterous parasite Coccophagus agencyi Comp. in Los Angeles County, Calif., has been extremely gratifying. Over 99 per cent of the 20,000 acres of citrus in this county recorded as having been infested with this mealybug are so slightly infested this year that no damage could possibly be done to the crop. In 1931, 97 per cent was in this condition, while the average for the preceding six years was but 83 per cent controlled. Thirty-three per cent of the previously infested acreage was found to be non-infested this year. Last year this reduction in infested acreage was but 26 per cent. It is believed that the new hymenopterous parasite has played an important part in reducing the infestation.

#### MEXICAN FRUIT WORM 1

The outstanding development in the Mexican fruit worm (Anastrepha ludens Loew) situation was the finding of an infestation, after an interval of approximately 17 months, on the United States side of the Rio Grande. This infestation was discovered on April 22 in fruit held in storage in Mission, Tex. Previous to this oranges produced in a patio in Matamoros were found infested on April 9. On both April 15 and 16 an adult caught in traps located at a distance of 11 and 5 blocks from this patio. During July 30 flies were taken on 13 different premises in the city of Matamoros; 23 adults were taken during August in traps in Matamoros and 2 specimens, (Anastrepha pallens Coq.), were collected, one in a grove near Mission and the other in a grove near Brownsville, Tex. This species was first described from specimens taken at Brownsville in 1904. Nothing is known of the food plants of this species.

1 Plant Quarantine and Control Administration, U. S. D. A.



## COLORADO POTATO BEETLE

The first adults of the Colorado potato beetle (Leptinotarsa decemlineata Say) were observed at Incedale, Miss., on February 19. During the last week in March the insect was observed in Texas. During April the beetles became unusually abundant in the Sandhorough district of North Carolina and in the Norfolk district of Virginia. Another heavy infestation occurred during this month in northern Florida. During May the beetle became very troublesome along the Atlantic seaboard as far north as southern New Jersey, and it was also reported as very numerous in the Lewiston district of Idaho. During the late spring and early summer it was quite generally reported as abnormally abundant from the New England States and the Middle Atlantic States westward to the Great Plains, with a very severe outbreak in northwestern Iowa. Late in June it appeared in the city of Ogden, Utah, but by the end of July the isolated colony had apparently been eradicated. In Idaho this insect is now moderately abundant in Grant and Baker Counties.

## POTATO TUBER WORM

During the early spring, reports of heavy infestations of potatoes by the potato tuber worm (Gnorimoschoma operculella Zell.) were received from Los Angeles County, Calif. Between April 15 and May 1 more than 1,200 lugs of new potatoes were rejected in the Los Angeles wholesale markets on account of this insect. During the third week of June larvae were found attacking tobacco at several places in Kentucky. A slight infestation of tobacco in Georgia and Tennessee was also reported during June. Late in July reports were received from Osceola and Palm Beach Counties, Fla., that this insect was doing considerable damage to potatoes in storage. It was also found early in the year in potatoes in storage in Delaware. For the first time in many years this insect was observed during August damaging tobacco in Wisconsin.

## TOMATO PIN WORM

In the late summer and early fall reports were received from southeastern Pennsylvania that the larvae of the tomato pin worm (Gnorimoschoma lycopersicella Busck) were making large blotch mines and destroying the buds of tomatoes, both under glass and in the field. Late in November adults emerged and were identified by Mr. A. Busck as this species, which heretofore has been recorded only from the Pacific Coast, where it has been known for a number of years as a pest of tomatoes, particularly in the State of Sinaloa in Mexico and in southern California. Here it is a pest of considerable importance. In 1930 it occasioned a 40 per cent loss to the tomato crop in San Diego County, Calif.

## VEGETABLE WEEVIL

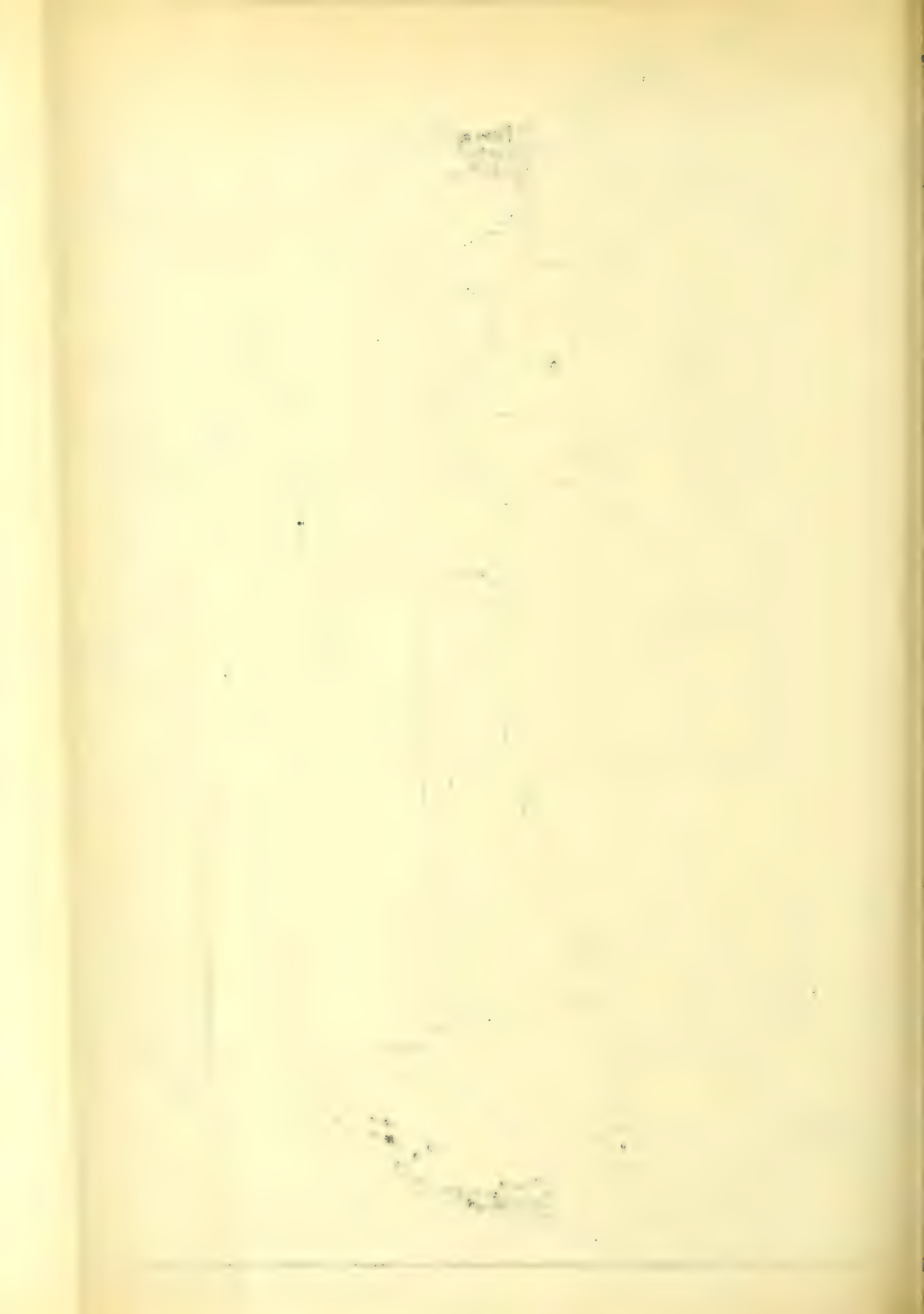
The vegetable weevil (Listroderes obliquus Gyll.) was first observed during the last week in January 1931 at Vicksburg, Miss. During late winter and early spring it did severe injury in many localities, in some cases entirely destroying turnip fields and cabbages in hot beds. It continued





POTATO THREE WHEY

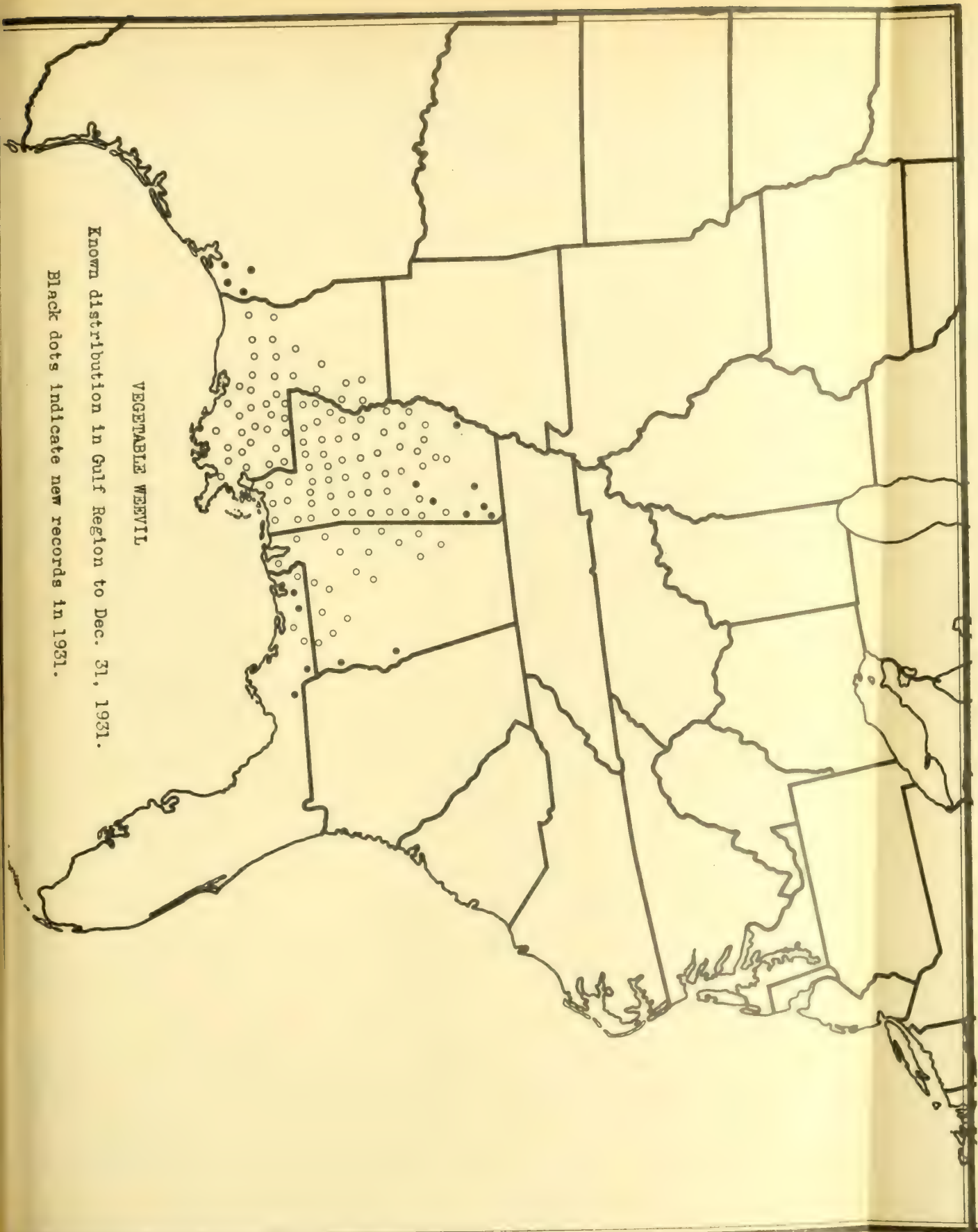
All records in Survey files to Dec. 31, 1937.  
(Not known to be established in Northern States.)



VEGETABLE WEEVIL

Known distribution in Gulf Region to Dec. 31, 1931.

Black dots indicate new records in 1931.







its work throughout the greater part of April and during early May turned its attention to the early vegetables such as tomatoes. It practically disappeared during June and was not seen again in destructive numbers until late October. During December complaints of severe damage were received from the southern part of the infested territory. In California this insect was decidedly less abundant this year. This is believed to be due to successful control measures. The spread of this insect in the Gulf region includes four counties in western Florida, two counties in eastern Alabama, seven counties in northern Mississippi, and four counties in eastern Texas.

#### SWEET-POTATO WEEVIL 1

"Damage by the sweet-potato weevil (Cylas formicarius Fab.) has been almost normal in Mississippi and Alabama during 1931. There has been a slight increase in the number of infested properties, but the total acreage of infestation has not materially increased, nor has the infested territory been extended. The infestations found during the year have been in very thickly settled communities, where little farming, other than small garden patches, is done. The heaviest concentration of infested properties is located in and around Logtown, Miss. Most of these infested properties are small garden patches. In the majority of cases the degree of infestation was listed as light; however, in some instances the degree of infestation was fairly severe."

#### MEXICAN BEAN BEETLE 2

Generally speaking, severe damage by the Mexican bean beetle (Epilachna corrupta Muls.) in the Eastern States in 1931 was more prevalent in areas not affected by the drought of 1930. These areas were chiefly New Jersey, Delaware, Long Island, and Connecticut. However, a remarkable recovery was made in southern Ohio and Kentucky, and damage was severe in those states. In addition, considerable damage was done in parts of Tennessee, North and South Carolina, Virginia, southeastern Pennsylvania, western Maryland, and northern Alabama. Appearance in the field and seasonal life history were similar to 1930. The survival over winter in Ohio was the highest of record. At Arlington Farm it was lower than average, but at Norfolk, Va., it was about average. Infestations outside of the known area of 1930 were found in Dougherty County, Ga.; Vigo, Parke, and Cass Counties, Ind.; Windham County, Vt.; Bristol County, Mass.; Washington County R. I., and the 12 westernmost counties in Kentucky.

#### COREID BUGS

Late in July two species of coreid bugs (Alydus pilosulus H. S. and A. surinus Say) were found to be seriously injuring bush lima beans in east-central Georgia. The injury resulted from the insertion of the beak through

1 K. L. Cockerham, Bureau of Entomology, U. S. D. A.

2 M. F. Howard, Bureau of Entomology, U. S. D. A.

the pod and the withdrawal of the sap from the developing seeds. Both species seem to be well distributed in the United States, occurring from New England southward to Florida and westward to California. Heretofore neither species has been recorded as of any economic importance.

#### VARIEGATED FRITILLARY

Larvae of the variegated fritillary (Euptoieta claudia Cram.) destroyed a large portion of a 13-acre patch of soybeans and lesser areas of snap beans, corn, sweetpotatoes, and cowpeas during early July in eastern Tennessee. These fields had a considerable growth of passion-flower vines, which seems to be the preferred food plant. Late in September larvae were collected on privet (Ligustrum sp.) at Belzoni, Miss.

#### PEA APHID

Late in February and March the pea aphid (Illinoia pisi Kalt.) became very troublesome in the Salt River Valley in Arizona, where it attacked peas, alfalfa, and vetch, and in the Willamette Valley of Oregon, where it attacked vetch. During March it appeared in outbreak numbers in southern California and during April in parts of Kansas and northeastern Arizona with isolated infestations reported from Mississippi. During May it was quite generally reported from widely scattered localities throughout the country, although the outbreaks were limited in extent. During June late peas in Wisconsin were carrying the heaviest infestation recorded in the last 8 years, and during July this insect destroyed practically the entire canning pea crop in the eastern part of Michigan and was causing considerable damage to peas in northern and western New York. During late October the aphid started to increase again in Wisconsin to by far the largest infestation experienced in the fall since 1922.

#### CABBAGE MAGGOT

Eggs of the cabbage maggot (Hylemyia brassicae Boucho) were found on cabbage in Pennsylvania during the first week in May, and egg laying was well under way in central New York by the middle of the month. The first egg laying in Massachusetts was observed on May 6 and in Connecticut on May 15. By the end of May this insect was damaging from 5 to 25 per cent of the cabbages in parts of Connecticut, one grower alone losing between 2,000 and 3,000 plants. The maggot became so serious in central and western New York that unscreened cabbage beds were quite generally damaged from 16 to 60 per cent and in a few cases all of the plants were destroyed. Similar serious depredations were reported from New Jersey, where the insect was said to be worse than it had been for several years. Other States reporting damage by this insect were Indiana, Kentucky, Wisconsin, and Montana.

#### IMPORTED CABBAGE WORM

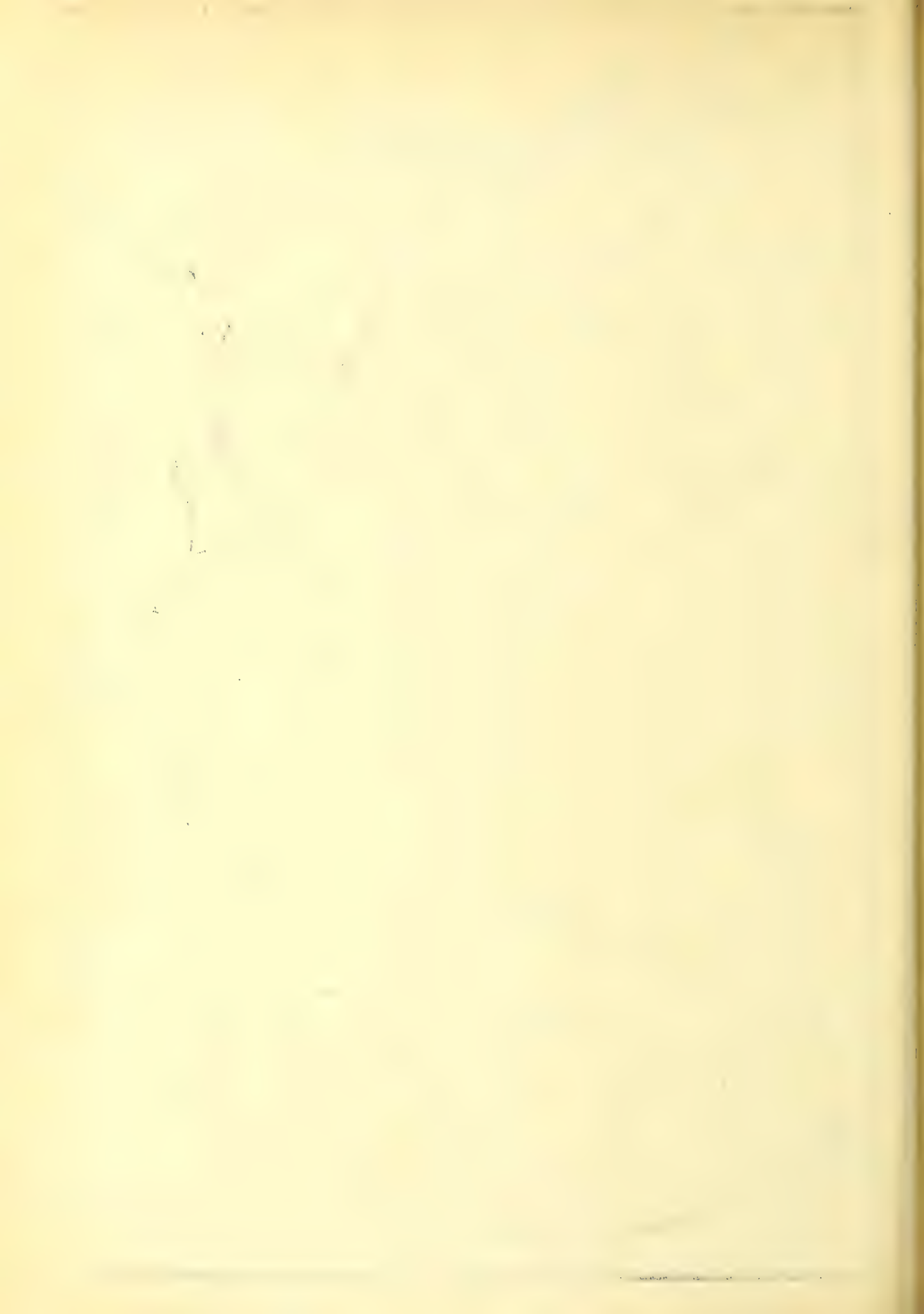
During the latter part of February the first adults of the imported cabbage worm (Pieris Ascia rapae L.) were observed in the fields as far north as North Carolina and Missouri. Early in April the first adults were observed in Nebraska and by this time they were becoming very plentiful in the Southern States. In early May the adults had been observed in North





PICKLE WORM

All records in Survey files to Dec. 31, 1931.  
(Probably not a permanent resident in Northern States.)



Dakota and the larvae were becoming troublesome as far north as Indiana. During June this insect was reported as abundant as far north as Iowa and Wisconsin, and during July it was quite generally reported as unusually troublesome in the Central States as far westward as Minnesota and Kansas. Serious depredations continued in the Middle Atlantic and Central States during the greater part of the summer and well into the fall, the area of serious numbers extending as far west as the Dakotas and Iowa.

#### HARLEQUIN BUG

The harlequin bug (Murgantia histrionica Hahn) was observed active in eastern Texas during the middle of February, and the first adults to be seen in the field along the Atlantic seaboard were observed on April 9 in Virginia and two weeks later in North Carolina. By the middle of April the insect was very abundant in the Gulf Coast region, where it was doing considerable damage to turnips, kale, and collards. As the season advanced heavy infestations were reported in the Norfolk district of Virginia and northward to southern New Jersey, and late in the season, mid-August, it was found in numbers in southeastern Nebraska, Indiana, Kentucky, and the District of Columbia.

#### A PLANT BUG

During midsummer calls were received from several growers of tomatoes in Orange County, Calif., asking for assistance in controlling the plant bug Engytatus geniculatus Reut. This insect was found to be quite numerous in the field and feeding spots were evident on the stems. This appears to be the first record of this insect as a tomato pest in the United States. The species was described in 1876 from Texas. It has been reported from Louisiana as a predator on the eggs of Heliothis spp. and is apparently widely distributed in this country, being recorded from Florida, Louisiana, Texas, and California. Van Duzee says the species occurs from Florida to southern California. It has also been recorded from Mexico, Brazil, and Hawaii. In Brazil it is said to be injurious to tobacco and in Hawaii it is recorded as the most serious pest of tomatoes where it damages the fruit by sucking the juice from the developing ovaries, causing a premature falling of the blossoms. The insect was first collected in the Hawaiian Island by O. H. Swezey in 1924. It was also reported from there in 1925, 1926 and 1929.

#### SQUASH BUG

During June we began receiving reports of the squash bug (Anasa tristis DeG.) from the South Atlantic and Lower Mississippi Valley States, where the insect was doing considerable damage to summer squash. As the season advanced, reports became much more numerous and included the Middle Atlantic and Central States extending westward to Kansas and Nebraska. Serious damage was reported from the East Central, the West Central, the Middle Atlantic, and the South Atlantic States westward to Mississippi, and also from Idaho, Utah, and New Mexico. The crops damaged included squash, pumpkin, melon, and cucumber. In Utah this insect has been a pest for a number of years and has practically eliminated squash as a crop in many



localities. Throughout practically the entire territory the insect was said to have been more troublesome than in many years, and in Ohio it was more destructive than ever before recorded.

#### BANDED CUCUMBER BEETLE

The banded cucumber beetle, (Diabrotica balteata Lec.) was quite generally reported in the Gulf region from Florida to Arizona. As far as the records of the Survey go, this insect was first recorded in Florida in 1926 and it now seems to be quite prevalent in that State, particularly over the Peninsula. Although it is doing occasional damage to snap beans, dahlias, and a number of other crops, it was not of any considerable economic importance this year.

#### PICKLE WORM

The first adult of the pickle worm (Diaphania nitidalis Stoll) to be recorded was observed in Mississippi on May 16. The first larvae of the season were observed boring in summer squash on July 17 in North Carolina. As the spring advanced this insect became increasingly numerous. Reports of damage were received from practically the entire lower Mississippi Valley and South Atlantic region northward to New England and Ohio. Usually this insect is of very minor importance in the Northern States, but this year it did considerable damage in Maryland, Ohio, and Connecticut. This is the first record of it as a pest in Connecticut.

#### SEED CORN MAGGOT

The first report of damage by the seed corn maggot (Eylemyia cilicrura Rond.) was received from southern Mississippi on January 21; and on February 18 it was observed destroying corn in Eastland County, Tex. In March the insect was reported as destroying cucumber plants in central Florida. It was not so serious as usual on potato seed pieces, beans, and peas in the trucking section of Virginia and the Carolinas, although it was reported as causing considerable damage to snap beans in North Carolina, and during the cool weather of May it did considerable damage to bean seed in Virginia and to corn, peas, and beans in western Texas, Illinois, Missouri, parts of Kansas, and Utah. During June the insect was rather destructive to bean plantings in western New York and was reported as damaging corn and beans in Indiana, Michigan, Minnesota, and Nebraska.

#### ASPARAGUS MINER

Although the asparagus miner (Agromyza simplex Loew) has been known in northern and central California for a good many years, it was recorded this year for the first time in the southern part of the state in Los Angeles County.

## BOLL WEEVIL 1

"In the Rio Grande Valley of Texas the boll weevil (Anthonomus grandis Boh.) was active throughout the winter of 1930-31, and more numerous in the month of May in southern counties than for a number of years, continuing to increase and becoming more destructive as the season progressed. By July it was active in practically every county in the main cotton belt of the State as far west as Tom Green County. Damage became serious in August in scattered localities in northeastern, central, and southeastern counties. In Oklahoma weevils were numerous in 29 counties in the eastern half of the State in June, increasing in numbers and damage during July and August. In Arkansas infestation and damage were light and widely scattered. In Louisiana weevil population and damage were slight until after July 15, when showery weather caused rapid reproduction with serious damage, which continued into September, when damage to bolls became quite general. In Mississippi infestation was comparatively light and scattered until after July 15. Continued rains promoted an increase in infestation in all parts of the State during August and September, with considerable damage resulting to young bolls. In Georgia dry weather held the infestation to practically a minimum with very little damage to the crop. In Alabama infestation in the latter part of June was considerable in southern counties and light but general in the central section of the State. In North Carolina the weevil was fairly numerous and damage along the South Carolina border and in a few scattered counties in central and northern sections. Rains in August caused a heavy increase in number of weevils and damage in most districts, practically all squares becoming infested. The extreme southern counties appeared to suffer the greatest damage. In South Carolina a high degree of infestation developed during June and continued in most fields during July and August. Dry weather during September and October reduced weevils to moderate numbers. In general, infestations and resulting damage were heavy throughout southern and eastern Texas, eastern Oklahoma, Louisiana, Mississippi, and southern Alabama, and comparatively light in Arkansas, Tennessee, northern Alabama, Georgia, and the greater part of North Carolina. Another area of rather heavy infestation occurred in South Carolina and the southern tiers of counties in North Carolina."

## THURBERIA WEEVIL 2

The Thurberia weevil (Anthonomus grandis thurberiae Pierce) has this fall been found outside the areas previously under regulation on account of this pest, near Eloy, Pinal County, Ariz.

## PINK BOLL WORM 3

Scouting for the pink boll worm (Pectinophora gossypiella Saund.) in the crop near 1931 had not yet been completed on December 1, the date of

- 1 G. A. Maloney, Bureau of Entomology, U. S. D. A.
- 2 Plant Quarantine and Control Administration, U. S. D. A.
- 3 Plant Quarantine and Control Administration, U. S. D. A.



the last available report. The scouting thus far indicated relatively heavy infestations in Presidio County and the southeastern corner of Hudspeth County, Tex.; light infestations in Brewster, El Paso, Reeves, and Ward Counties, and a trace in Midland and Pecos Counties, Tex. On November 12, 13, and 14 a study of 14 fields in the Big Bend area in Presidio County, the most heavily infested section in the United States, indicated 21 per cent of unpickable bolls. In New Mexico, slight infestations were found in Chaves, Dona Ana, Eddy, and Otero Counties, and in Arizona in Graham, Greenlee, and Maricopa Counties. Scouting and the examination of gin trash in the Salt River Valley (Maricopa County) indicate progress in the direction of the elimination of infestation.

#### COTTON LEAF WORM

The cotton leaf worm (Alabama argillacea Hbn.) was first reported this year from Nueces County, Tex., on June 27. This is somewhat later than the observations of 1930, as this insect was very prevalent in practically all fields in the lower Rio Grande Valley in the last week in June of that year. No reports from the lower Mississippi Valley region were received until late August this year, and the insect reached the cotton too late to do any material damage. Late in October a single specimen was taken in Michigan, and large numbers were present in Brown County, Wis., on October 1. The moths did serious damage to peaches in Cass County, Nebr., during the first week in October. No large flights were observed in any of the Northern States this year. It will be recalled that last year a very heavy flight occurred into the Northern States, extending over the East Central, Middle Atlantic, and New England States, finally reaching Canada.

#### PERIODICAL CICADA

Brood V of the periodical cicada (Tibicina septendecim L.), a very compact brood centering in West Virginia and eastern Ohio, appeared in large numbers over practically its entire range. A very well defined colony on the eastern end of Long Island, New York, was definitely confirmed by this year's observations. Brood V appeared during 1931 in the following counties:

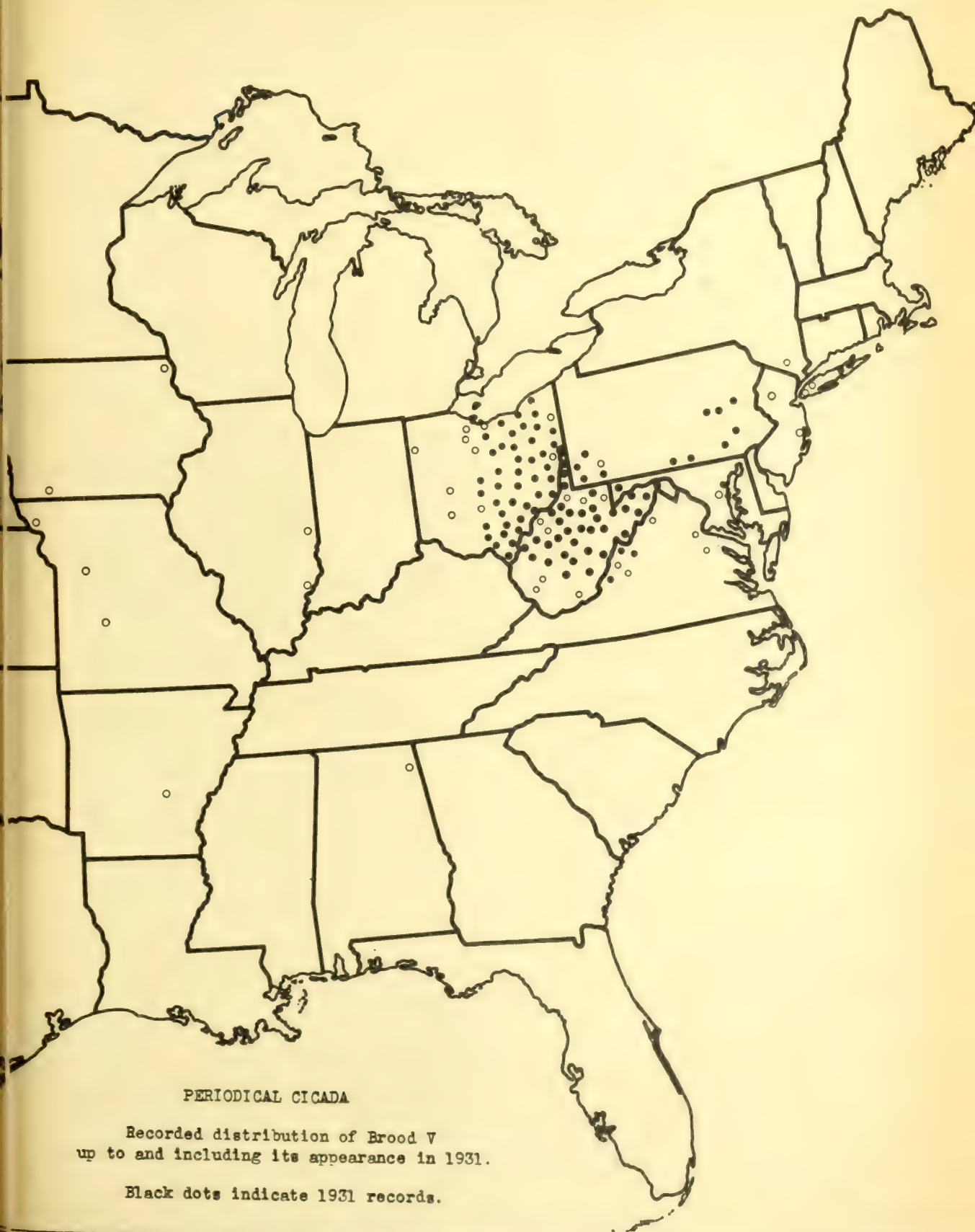
##### Ohio

Ashland, Athens, Belmont, Carroll, Coshocton, Columbiana, Cuyahoga, Delaware, Fairfield, Franklin, Gallia, Genaga, Guernsey, Harrison, Hocking, Holmes, Huron, Jackson, Knox, Lake Lawrence, Licking, Lorain, Mahoning, Medina, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Portage, Richland, Ross, Scioto, Stark, Summit, Tuscarawas, Vinton, Washington, Wayne.

##### West Virginia

Barbour, Braxton, Brooke, Calhoun, Clay, Doddridge, Fayette, Gilmer, Grant, Greenbrier, Hampshire, Hancock, Hardy, Harrison, Jackson, Kanawha, Lewis, Lincoln, Marshall, Mason, Mineral, Monongalia, Morgan, Nicholas, Ohio, Pendleton, Pleasants, Pocahontas, Putnam, Randolph, Ritchie, Roane, Taylor, Tucker, Tyler, Upshur, Webster, Wood.







Pennsylvania

Adams, Allegheny, Berks, Carbon, Fayette, Chester, Franklin, Greene, Lancaster, Northumberland, Schuylkill, Washington.

Virginia

Alleghany, Augusta, Highland, Shenandoah.

Maryland

Garrett.

New York

Suffolk.

GIPSY MOTH and BROWN-TAIL MOTH 1

(Porthetria dispar L.)

There was less defoliation caused by the gipsy moth/this summer than for several years, and the trees in most of the area were practically free from gipsy moth feeding. Defoliation was severe in the counties of Bristol, Plymouth, and Barnstable, Mass. There was recorded a total of 204,720 acres in New England which showed some feeding by the gipsy moth caterpillars, but over one-half of this was classified as less than 10 per cent defoliated, leaving 101,583 acres classified as from 10 to 100 per cent defoliated, and over one-half of this amount (54,710 acres) was in the southeastern section of Massachusetts. No infestation of the gipsy moth was found in 1930 to 1931 on Long Island by the <sup>New York</sup> conservation department, except in the towns of North Hempstead and Oyster Bay. In the former, 110 egg clusters were discovered in 17 infested localities, and in the latter, 67 were found in 24 infested localities. Practically all of these infestations were found in woodland. During the past year to July 1, 1931, no gipsy moth infestation was found in the barrier-zone area in Vermont in the scouted territory.

Early in July, 1931, a scattered infestation was found in Colebrook, Conn., near the Massachusetts State line. A group of towns including Sandisfield and New Marlboro, Mass., and North Canaan, Canaan, and Norfolk, Conn., have carried numerous infestations, many of them in woodland, during the last two years. The result of work in the New York barrier zone shows somewhat fewer infestations than during the previous fiscal year and indicates that marked progress has been made in cleaning up infested locations. The last gipsy-moth infestation in New Jersey was found in May, 1929. The southern half of Bridgewater Township and the northern half of Hillsboro Township have been examined with special care, as this area was the most heavily infested when the insect was first found in New Jersey. The work done thus far has failed to reveal any trace of the gipsy moth during 1930-31.

The brown-tail moth (Nyctia phaeorrhoea Don.) has not been found outside the regulated area this year.



## SATIN MOTHS 1

During 1931 the satin moth (Stilpnotia salicis L.) was found in new localities in the following counties and quarantine regulations were modified to cover the additional areas: Piscataquis, Somerset, and Franklin Counties, Me.; Orange County, Vt.; Berkshire and Franklin Counties, Mass.; and Hartford, Litchfield, New Haven, and Fairfield Counties, Conn.

## TENT CATERPILLARS

The forest tent caterpillar (Malacosoma disstria Hbn.) was generally reported from the New England and the northern Middle Atlantic States as very scarce. Late in April the insect was active and abundant in the Gulf region in Alabama and Louisiana. In Louisiana, after defoliating the sweet gum and willow, it attacked oak and wild blackberries and also inflicted considerable injury to strawberries by eating the flowers. During May, in Virginia, several hundred acres of forest land in Fluvanna County were completely defoliated; a similar outbreak occurred in Buckingham County. These were said to be the worst outbreaks ever experienced in that State. From June 10 to 20 the moths of these caterpillars were so numerous in the streets of Lynchburg and Roanoke, Va., that merchants were forced to turn out their window lights. Adults were observed early in May in large numbers at Orlando, Fla. During June there was some defoliation reported from Hancock County, Me. The eastern tent caterpillar (Malacosoma americana Fab.) on the whole was not abnormally numerous this year throughout the New England, Middle Atlantic, and South Atlantic States. On the other hand, reports of unusual numbers of this insect were received from Arkansas and Texas. During the late spring there were reports of some defoliation, especially of wild black cherry, in southern Maine, and it was also recorded as abundant in restricted localities in the other New England States. The California tent caterpillar (M. californicus Pack.) was extremely prevalent in late March around Phoenix, Ariz., where it was defoliating cottonwoods and severely injuring apricot foliage.

"The western tent caterpillar (Malacosoma pluvialis Dyar.) was again abundant on alder, poplars and willow along the coast of Oregon and the Columbia River. However, defoliation of these trees was not so severe as last year and only a few places showed trees completely stripped." 2

## SADDLED PROMINENT

Adults of the saddled prominent (Heterocampa guttivitta Walk.) issued in the New England area during May and early June. Eggs hatched in the Berkshire Hills of Massachusetts on June 10 and in the White Mountains of New Hampshire on June 16. This insect, which was at the peak of its abundance in 1930, is still quite numerous throughout western Massachusetts, southern Vermont, and New Hampshire. The greater part of the defoliation was confined to maple and beech.

- 1 Plant Quarantine and Control Administration, U. S. D. A.
- 2 Forest Insect Investigations, Bureau of Entomology, U. S. D. A.

## FALL WEBWORM

During the third week in May there was a sizable first brood of the fall webworm (Hyphantria cunea Drury) in the Georgia pecan orchards, and early in June this insect was also found on pecan in South Carolina and southern Mississippi. Over northern Mississippi this insect was comparatively scarce this year, and in general was not so serious as usual throughout the South. Late in August it was reported as being very abundant throughout the New England and Middle Atlantic States and as far South as Delaware. In New England it was more troublesome than it has been any time during the past 20 years.

## BAGWORM

The bagworm (Thyridopteryx ephemeraeformis Haw.) was reported as very abundant on arborvitae in George County, Miss., in February. In June the insect was reported from Columbus, Ohio. During July reports were received of serious damage to evergreens in Vermont, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, and Ohio. The bagworm was quite generally reported during August from New York westward to Indiana and Kansas, and southward to Mississippi and Florida. Reports continued to come in during September from this same general area.

## BARK BEETLES 1

The mountain pine beetle (Dendroctonus monticolae Hopk.), which has been sweeping through all of the lodgepole and white pine stands of the Pacific Northwest, is now decreasing in many sections, owing largely to a lack of suitable host material. The most serious epidemic in California is in the Medicine Lake district of Shasta National Forest and there is evidence of a decided increase in some stands of sugar pine in the Sierra Nevadas. In Oregon and Washington epidemics have been noted during the year on the Fremont, Crater Lake, and Deschutes National Forests, the Klamath Indian Reservation, and throughout the Cascades of Washington. The outbreak in Mount Rainier National Park was completely under control. Increased losses occurred throughout the lodgepole pine forests of Montana and Idaho, and within the Beaverhead National Forest alone there were over twelve million trees destroyed in 1931. There was also a marked increase in losses in Yellowstone National Park. In central Idaho the infestation has spread throughout Salmon, Challis, Payette, Weiser, and Idaho National Forests, and it is now moving northward. Similar outbreaks continued to ravage the Pine Forest on the Kaniksu and Pend Oreille National Forests. In general the western pine beetle is not materially advancing in intensity of infestation. However, losses running as high as 3 per cent of the stand were observed along the western slopes of the Sierra Nevadas in the Sierra, Stanislaus, and Sequoia National Forests, California. Throughout southeastern and eastern Oregon and Washington losses were particularly heavy on the Fremont, Deschutes, Ochoco, and Malheur National Forests, the Klamath Indian Reservation, and the private timber lands adjacent to these areas. In southern Oregon the infestation is increasing and reached 3 to 4 per cent of the timber stand this year, while on the Ochoco and Malheur



areas losses ran from 5 to 7 per cent of the timber. It is estimated that approximately six hundred million board feet of western yellow pine was killed by this beetle during the year throughout Oregon and Washington. In Glacier National Park, "The southern pine beetle (D. frontalis Zimm.) was exceedingly scarce throughout the forest in the Southeastern States. This situation was believed due to the nearly complete natural control of the beetle during the late fall and winter of 1930-31, brought about largely through two factors, namely, (1) abnormally high temperatures and (2) to a lesser extent to the activities of birds, particularly woodpeckers. The high temperatures during October and November of 1930 brought about premature maturity and emergence of broods which normally overwinter in the larval, pupal, and adult stages. A large percentage of those broods were destroyed by woodpeckers as they reached the mature larval, pupal, and callow adult stages. Others which emerged attacked trees but were unable successfully to establish their broods in them so late in the season. The only activity noted during 1931 was in the vicinity of Asheville, N. C., where the deficiency in rainfall continued to be somewhat greater than in surrounding noninfested areas. Near Asheville several spot outbreaks occurred becoming more noticeable in the late summer and fall months."

#### PINE SHOOT MOTHS

Pine shoot moths (Rhyacionia spp.) are causing considerable concern in the Northeastern States as serious pests to cultivated conifers, particularly nursery stock, upon which they are destructive to the terminals. Reports of serious damage to Scotch pine (Pinus montana), red pine (Pinus rubra), mugho pine (Pinus montana mughus), Austrian pine (P. nigra), and other species of pine nursery stock in Pennsylvania by Rhyacionia buoliana Schiff., and in the vicinity of New Haven, Conn., and the Metropolitan district of Boston, Mass., were reported. Rhyacionia frustrana Scudd. appeared in large numbers in a plantation of pitch pine (P. rigida) during August at Cheney, Pa., and also occasioned considerable injury to young "spruce pine" (Tsuga canadensis) at Laurel, Miss. A new species of pine shoot moth (Eucosma gloriola) described by Heinrich (Proceedings Ent. Soc. Washington, Vol. 23, No. 8, page 196, Nov. 23, 1931) was found to be quite generally abundant last year in the lateral shoots of white pine (P. strobus) at North Stamford, Conn. During this year it was sufficiently numerous at some places to cause an appreciable amount of injury. The moths from the type material emerged during the early part of May of this year from larvae collected during early July, 1930, by Dr. E. P. Felt.

#### SPRUCE BUDWORM

The first adults of the spruce budworm (Harmoloba fumiferana Clem.) of this year were observed at Fargo, N. Dak., on June 17. This insect defoliated large areas of balsam fir and several species of pine in Wisconsin and North Dakota. During early July, in Wisconsin, areas in some cases covering an entire township had practically every tree completely defoliated. An outbreak of this insect was first recorded in the Cody Canyon, Shoshone National Forest, of Wyoming in 1926, and since that time has spread over a tremendous acreage and destroyed large areas of Douglas fir; this outbreak decreased somewhat in severity during 1931. Another outbreak in the Ochoco



National Forest in Oregon has produced large areas of dead and dying white fir and Douglas fir and larch during the year.

#### HEMLOCK LOOPER

The hemlock looper (Ellopiia fiscellaria Guen., var. lugubrosa Hulst) during the past three years has built up a tremendous epidemic in Pacific and Grays Harbor Counties of Washington. During 1931, ninety million board feet of hemlock, with some western red cedar and Sitka Spruce, is estimated to have been killed in Pacific County and another 10 million board feet killed in Grays Harbor County. A total of 162 million board feet has been killed in Pacific County during the three years of the epidemic.

#### LARCH CASE BEARER

The larch case bearer (Coleophora laricella Hbn.) was reported as severely damaging large stands of larch in Maine, Vermont, Massachusetts, and Pennsylvania. In three counties in Maine the insect defoliated from 50 to 100 per cent of every stand of larch. This damage continued into June, when reports of damage were also coming from Massachusetts, New York, and New Hampshire. A late brood of this insect defoliated larch in September in New York.

#### BIRCH SKELETONIZER

Birches were very severely skeletonized by the birch skeletonizer (Bucculatrix canadensisella Chamb.) during the late summer and early fall in Maine, New Hampshire, Vermont, New York, Wisconsin, and Minnesota. In many places in the Adirondacks of New York State the birches were completely defoliated. In Maine hundreds of thousands of acres of birch in the northern part of the State were browned by this insect. The birch leaf-mining sawfly (Phyllotoma nemorata Fall.) was associated with B. canadensisella throughout the New England area and New York.

#### A LEAF ROLLER

Although the leaf roller Cacoecia conflictana Walk. has been known for a good many years as a poplar pest in Western Canada, it seems to be a comparatively new pest in the United States. This year we received a report of approximately 43,000 acres of poplar being defoliated in the Moosehead Lake district in Maine. The adults were in flight the last week in June and by the middle of July another brood of larvae were feeding on the poplars.

#### ELM LEAF BEETLE

Overwintering adults of the elm leaf beetle (Galerucella xanthomelaena Schrank) were abundant in late April at Narragansett, R. I., and during the latter part of June eggs and small grubs were very numerous in southern New England. Indications of the work of this insect were also observed during June in West Virginia, and it was reported as very abundant at

Jackson and Lexington, Oreg. During July it was quite generally reported from New Hampshire southward along the Atlantic seaboard to Maryland, with occasional outbreaks in Ohio and Kentucky. Early this spring this beetle was recorded for the first time in Yosemite National Park, Calif., and late in the season a report was received that it was spreading rapidly in many parts of California.

#### BOXELDER BUG

Early in the spring the boxelder bug (Leptocoris trivittatus Say) became very much of a nuisance as a household pest in many parts of Iowa, Missouri, Colorado, and Utah. Early in April it was reported from North Dakota. By mid-July it was starting to become troublesome in dwellings in Indiana, and as the summer advanced it became unusually abundant throughout the East Central States and in the Middle Atlantic States from Delaware southward.

#### BEECH SCALE 1

"In April of this year the beech scale (Cryptococcus fagi Bar.) was found in the vicinity of Boston, Mass. As a result of preliminary survey this insect was found in three distinct areas: One is between Augusta and Belfast in Maine, another includes Gloucester, Essex, Manchester, and Beverley in northeastern Massachusetts, and the third includes the Boston district. As far as it is known, this insect is limited to beech, both the American and the European species being attacked. It is believed, both in Europe and Canada, that the slime flux often associated with this insect is more dangerous to the trees than the scale itself. This insect is recorded as quite prevalent in the Maritime Provinces of Canada."

#### JAPANESE BEETLE

During the summer the Japanese beetle (Popillia japonica Nerm.) was collected at several places outside of the previously known infested areas, including Charleston, S. C.; points in Somerset, Worcester, Anne Arundel, Talbot, and Wicomico Counties, Md.; Richmond, Franktown, and Nassauadox, Va.; Altoona and Erie, Pa.; Little Falls, Watkins Glen, Ft. Edwards, and Albany, N. Y.; Taunton, Mass.; Pawtucket, R. I.; and Cleveland and Columbus, Ohio.

#### ASIATIC BEETLE 2

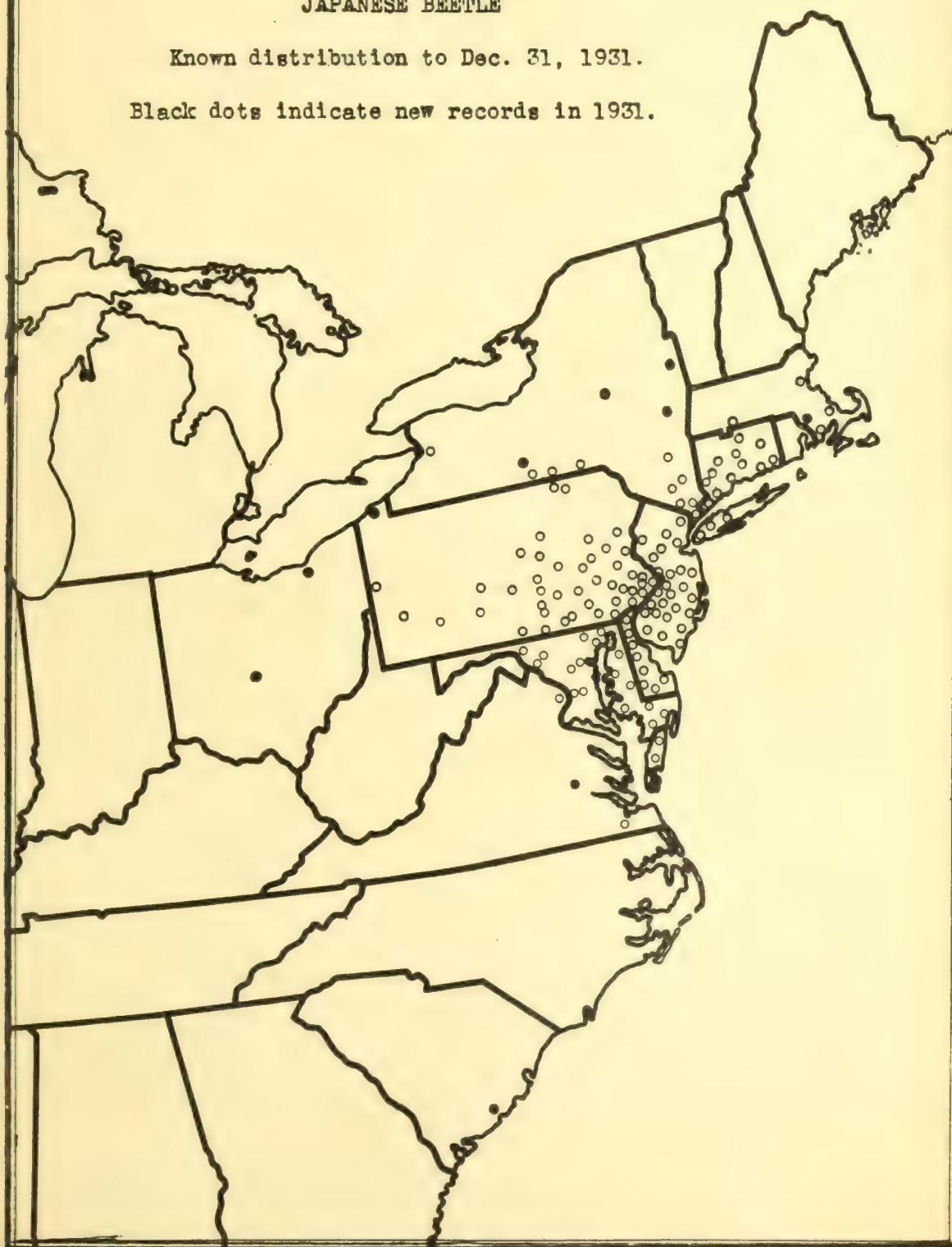
The Asiatic beetle (Anomala orientalis Waterh.) did considerably more damage to larvae in Westchester County, New York, than in previous years. On Long Island damage is being successfully controlled. This insect is now known to be distributed in Suffolk, Nassau, Queens, Westchester, and Schenectady Counties, N. Y.; Essex, Bergen, and Union Counties, N. J.; and Fairfield and New Haven Counties, Conn.

- 1 J. V. Schaffner, Jr., Bureau of Entomology, U. S. D. A.
- 2 H. C. Hallock, Bureau of Entomology, U. S. D. A.

# JAPANESE BEETLE

Known distribution to Dec. 31, 1931.

Black dots indicate new records in 1931.







## ASIATIC GARDEN BEETLE 1

The area of heaviest infestation by the Asiatic garden beetle (Autoserica castanea Arrow) was found on Long Island in Nassau and Queens Counties. An area of continuous infestation occurred around New York City in New York and New Jersey covering the western end of Long Island as far east as the eastern border of Nassau County, the southern portion of Westchester County, and in New Jersey the counties of Bergen, part of Passaic, Hudson, Essex, Union, and a small part of the north end of Middlesex and Monmouth. There were also outlying infestations at New London, New Haven, Cromwell, Manchester, Mansfield, New Canaan, and Southport, Conn.; Kingston, Fishkill, Babylon, Patchogue, and Brookhaven, Amawalk and Mt. Kisco, N. Y.; Riverton, Palmyra, Hammonton, Allens, and Cedar Grove, N. J.; Philadelphia and Harrisburg, Pa.; Milford and Winterthur, Del.; Frederick and New Church, Md.; East Falls Church, Va.; and Washington, D. C.

## A SCARABAEID

During the fall of this year reports from widely scattered localities in the Eastern States were received complaining of the damage done to golf greens, fairways, and private lawns by the larvae of the scarabaeid beetle Ochrosidea villosa Burm. In some cases the roots were so completely cut from the sod that it could be rolled up by hand. Among the reports received this year was one from Washington, D. C.; one from Bayside, Long Island; another at Lawrence, N. Y.; and a third at Woodmere, N. Y. Some 3 acres of lawn were also ruined on an estate near South Norwalk, Conn. This insect has been observed as a pest of lawns and golf greens in previous years. In 1908 it was reported from Middletown, Pa., and in 1930 it was reported as damaging golf greens in Sacramento, Calif. The insect is known to occur over practically the entire United States, having been reported from New York to California and southward to Alabama.

## GLADIOLUS THRIPS

During July, August, September, and October considerable alarm was caused in the cut-flower producing sections of Massachusetts, New York, Pennsylvania, and Ohio by the appearance of the gladiolus thrips (Taeniothrips gladioli Moulton) appearing in such numbers that buds and blossoms were ruined and leaves badly browned by its feeding, the damage occurring both in field-grown and greenhouse material. This insect was so prevalent in northern Ohio that several large growers were unable to exhibit at the National Gladiolus show at Cleveland. Another thrips (T. atratus montanus Hal.) was collected at Longmeadow, Mass., on gladiolus bulbs. This is a common European species that has not heretofore been recorded from North America. In Europe it feeds on a wide variety of plants, including asters, primroses, mullein, sweet clover, and scabiosa.

1 H. C. Hallock, Bureau of Entomology, U. S. D. A.

## A LEAF ROLLER OF ROSES 1

Severe infestation of foliage-eating lepidopterous larva on roses at Blue Point, Long Island, N. Y., was reported during August. Larvae were collected and adults reared, which were determined by Mr. A. Busck as Tortrix ivana Fern. This insect had previously been reported only from Florida, where it was reared from Iva imbricata (Fernald, C. H., Jour. New York Ent. Soc. 3 (2): 49-52, 1901). It is undoubtedly a true southern species. The larvae usually eat the young tender foliage around and on the developing buds and in this way quite often ruin the flowers. They also curl and roll the leaves, especially when ready to pupate. The Supreme, Killarney, and Briarcliff varieties of rose were being grown here but no one particular variety appeared to offer any preferential attraction to the insect.

## PAINTED LADY

During late June and July the larvae of the painted lady (Vanessa cardui L.) became very numerous in the New England States and in the entire upper Mississippi and Ohio River Valleys, covering the East Central, North Central, and West Central States. The larvae of the butterfly did no considerable damage, although they fed to some extent on hollyhocks in New England. In New England this species had not been reported in numbers since 1926. This insect is normally a thistle feeder and occasions much more alarm than damage when it appears in numbers.

## EYE GNATS

During the month of July eye gnats (Hippelates flavipes Loew and H. pusio Mall.) became quite troublesome along the Atlantic seaboard from Maryland southward to the Gulf region. In Georgia it appeared that human conjunctivitis cases were closely associated with the abundance of these insects, and in South Carolina cases of conjunctivitis of man and horses were said to be associated with the presence of these flies. As the season advanced these insects were found to be much more prevalent than they had been for many years in the South Atlantic States, and conjunctivitis was almost epidemic in southwestern South Carolina.

## STABLE FLY

During mid-September an unprecedented outbreak of the stable fly (Stomoxys calcitrans L.) occurred along the Atlantic Seaboard from Maryland to Florida. On the Eastern Shore of Maryland horses and cattle were so annoyed that many rushed into the surf to avoid the flies and were drowned, while others that were unable to reach the surf died on the beach. Dairies in the Carolinas reported considerable reduction in milk production. Reports were received from Missouri and the Gulf States



of less serious outbreaks. This condition persisted into early October. The abrupt decline in these flies along the coast seemed to be associated with very high tides.

# TERMITES 1

During the current year 654 cases of damage by termites (Isoptera) were brought to the attention of the Bureau of Entomology. These cases were scattered over 36 States, the District of Columbia, the Philippine Island, and Hawaii, as indicated in the following list:

Alabama	35	Nebraska	1
Arizona	4	New Jersey	7
Arkansas	15	New York	14
California	34	North Carolina	41
Colorado	1	Ohio	12
Connecticut	6	Oklahoma	18
District of Columbia	29	Oregon	2
Florida	82	Pennsylvania	15
Georgia	27	South Carolina	21
Illinois	8	Tennessee	37
Indiana	7	Texas	57
Iowa	8	Utah	2
Kansas	5	Virginia	66
Kentucky	15	West Virginia	5
Louisiana	22	Washington	2
Maryland	8	Wisconsin	3
Massachusetts	7	Wyoming	2
Michigan	7		
Mississippi	4	Philippine Islands	2
Missouri	24	Hawaii	1

1 T. E. Snyder, Bureau of Entomology, U. S. D. A.

## SUMMARY OF INSECT CONDITIONS IN HAWAII FOR 1931

O. H. Swezey

The sugarcane leafhopper (Perkinsiella saccharicida Kirk.) has been well controlled by natural enemies. On one plantation on the island of Hawaii there was an outbreak covering about 200 acres in early summer, but natural enemies, chiefly egg parasites, the egg-sucking bug Cyrtorhinus mundulus Bredd., and spiders, soon gained control.

No unusual infestation of the sugarcane weevil borer (Rhabdocnemis obscura Boisd.) has been noted. There is very satisfactory control by the New Guinea tachinid Ceromasia sphenophori Vill. The better control of rats in the sugarcane fields has lessened injury, for where cane is gnawed into by rats, the female borer more readily lays eggs in the cane, resulting in increased infestation.

The nutgrass armyworm (Spodoptera mauritia Bdv.) developed unusually bad outbreaks in several localities where sugarcane fields had been infested with nutgrass, especially on the island of Maui. Usually this pest is controlled by parasites, but poisoning had to be resorted to on a large scale.

In several localities in one plantation the grubs of the Asiatic beetle (Anomala orientalis Waterh.) caused enough injury to the roots of sugarcane to affect the yield. In most of the infested area, however, grubs have not been numerous enough to be detrimental. This pest is usually controlled by Scolia manilae Ashm., but in some cases, in fields of heavy infestation, the wasps were unable to gain access to the grubs, and in these areas some damage was done. Afterward, Scolia gained access and the grub infestations were controlled.

The Chinese grasshopper (Oxya chinensis Thunb.) has spread more widely on the Islands of Maui and Hawaii and gives indication of becoming a sugarcane pest of importance, as shown by the ragged leaves of fields bordering infested grass fields or grassy roadways. An egg parasite (Scelio sp.) introduced from the Malay States is being reared for distribution.

The pink sugarcane mealybug (Trionymus sacchari Ckll.) is very generally present in all sugarcane fields, but without causing particular injury. A parasite (Anagyrus sp.) has recently been introduced from the Philippines and has become established in a few localities. A ladybeetle (Pallus sp.) which specially preys on this mealybug, also introduced from the Philippines, is being reared and distributed and will no doubt help to ameliorate the mealybug conditions.

The gray sugarcane mealybug (Trionymus boninsis Kuwana) has been noticed rather more than usual in the cane fields, but it is mostly well controlled by the parasite Pseudococcobius terryi Ful.

The rose beetle (Adoretus sinicus Burn.) continues a troublesome pest in gardens and on many ornamental plants.

The corn ear worm (Heliothis obsoleta Fab.) is not usually a pest of corn here, but this year it has been very injurious. Half or more of the ears of green corn are found infested.

The coconut leaf roller (Omiodes blackburni Butl.) apparently has been held in control by parasites; in Honolulu the coconut leaves have been in perfect condition. However, on the Island of Maui the coconut trees are very ragged from the ravages of this pest.

The Mediterranean fruit fly (Coratitia capitata Wied.) has been less abundant this year than in some other years. A comparison of infestation for the years 1930 and 1931 shows a slightly lower infestation this year in several host fruits. The average infestation for 10 of the principal hosts was 59.4 per cent in 1930 and 50.4 per cent in 1931.

The melon fly (Bactrocera curcurbitae Coq.) has been about as prevalent as usual this year, not preventing good crops of melons and cucumbers.

Infestations by the rice borer (Chilo simplex Butl.) were not serious, about normal crops of rice being obtained.

A leafhopper (Emboasca sp.) has been present in the Islands for about 13 years. It has fed chiefly on amaranth weeds and other weeds, but this summer was very destructive to melon vines in one region.

The little fly Agromyza virens Loew, whose maggots live in the stems of Zinnia and a number of other ornamental plants, is becoming more destructive in gardens. It was first observed in Honolulu three years ago, and is now widely spread on Oahu.

The green scale (Coccus viridis Green) is becoming more destructive in Honolulu gardens, where it attacks several kinds of ornamental shrubs and other plants.

Hibiscus hedges are more and more infested with Herichionaspis minor Mask., which seems to affect this plant particularly, though it also attacks many other shrubs.



NOTES FROM ANNUAL REPORT ON INSECT CONDITIONS IN PORTO RICO

July 1, 1930, to June 30, 1931

M. D. Leonard

Insular Experiment Station, Rio Piedras, Porto Rico

A leafhopper, Agallia albidula Uhler, was common on watermelon vines at Arecibo on November 4, 1931 (Mills and Anderson; P. W. Oron det.). This species has apparently not been definitely recorded before from Porto Rico.

The woolly white fly (Aleurothrixus floccosus Mask.) moderately infested about 20 young Meyer lemon trees on the Station grounds in April at Rio Piedras.

The bamboo scale (Asterolecanium bambusae Edv.) (H. Morrison det.), was reported as heavily infesting bamboo at Cidra and at Mayaguez in August and September (A. S. Mills) and as infesting bamboo at Maricao in January (A. G. Harley). It was, however, undoubtedly generally distributed and common throughout the Island.

The eggplant stem-borer (Baris torquata Oliv.) found on beans.

An adult of the eggplant borer Baris torquata Oliv. was found on a bean leaf at Rio Piedras on Feb. 14, 1931. (A. S. Mills; L. L. Buchanan det.).

Specimens of Blissus leucopterus var. insularis Barber, were found on a garden pea plant from Vieques Island, September 10, 1930 (A. S. Mills; H. G. Barker det.).

Larvae of a moth, Brachyacna nalpigerana Wlsm., were common during the summer and fall in dry pods, and moths were reared from material from several localities. A prototrypid parasite of the larvae, Paralitomastix n. sp. (A. B. Gahan det.), was found in as high as 50 per cent of the larvae in some collections made.

The weevil Callosobruchus chinensis L. was found working in dry pigeon pea pods at Rio Piedras, August 8, 1930 (A. S. M.; H. S. Barber det.).

The palm aphid (Cerataphis lataniae Bdv.) was found badly infesting a plant of Cyrtopodium woodfordiae in Santurce on March 4, 1931 (Faxon and Mills; H. Morrison det.).

A leaf beetle, Cerotoma denticornis Fab., was fairly common on string beans at the Station during March and April but apparently not doing much damage. No other definite observations were made during the year, but the insect was probably fairly common and general, as is usual wherever string beans were grown.

Several adults of a leafhopper, Cicadella coffeella Coz., were taken on a coffee tree at Maricao, December 11, 1930 (A. G. Harley; P. W. Oman det.); apparently not recorded before from Porto Rico.

A leafhopper, Cicadella sirena Stal, was lightly infesting a 1/2-acre patch of okra at Trujillo Alto on March 10, 1931 (Anderson and Mills; P. W. Oman det.). This is the first record for okra in Porto Rico.

A scale, Conchaspis angraeci Ckll. (Morrison det.), heavily infesting the branches of an undetermined tree at Rio Piedras, July 7, 1930 (A. S. M.). Listed previously only on vanilla at Mayaguez (1917) and ornamental croton at Mameyes (1912).

Adults of a coreid bug, Corizus hyalinus Fab., were collected from eggplant leaves at Caguas, February 12, 1931 (R. Faxon and A. S. Mills; H. G. Barber det.); previously recorded here only from Rio Piedras in June, 1916, as "very abundant on weeds in a garden, some feeding on tomato" (Wolcott's "List").

At Aguada Cycloneda sanguinea L. was common in infested fields in March, but the pupae were highly infested by an undetermined chalcid. Although the extensive properties of the Aguirre Sugar Co. on the South Coast suffered a considerable dry spell during the winter, Mr. Herbert Osborn, jr., and others reported the aphid not so bad as during the previous year.

The cactus scale, Diaspis echinocacti opuntiae Ckll. (Morrison det.), observed on a cactus (Opuntia?), at Coano, September 30, 1930 (A. G. Harley), and one plant of Opuntia brasiliense was moderately infested in Santurce, March 24, 1931 (R. F. and A. S. M.).

A few caterpillars of Dicne vanillae L. were observed eating the leaves of one vine at Rio Piedras on July 13 (A. S. Mills).

A leaf beetle, Disonycha laevigata Jacoby, was abundant and doing considerable damage to a fair-sized garden patch of both beets and Swiss chard at Palo Seco on August 29, 1930. The grower stated that these beetles had troubled him for several years and had necessitated constant measures of control (M. D. L. & A. S. M.).

Flea beetles, Eptitrix cucumeris Harr. and E. parvula Fab., were more or less abundant on eggplant in several localities examined, especially during the fall and winter; more damage was done to seedlings than to plants in the field.

A pentatomid bug, Euschistus crenator Fab., was observed in all stages feeding on the fruits in a 2-acre planting at Arrecibo on February 24, 1930; about 15 per cent of the plants were affected (E. G. Anderson and A. S. Mills; H. G. Barber det.).

The "Vaquita verde," Exophthalmodes roseipes Chev., also did some damage to foliage in the main citrus section during the summer and, according to one of the best growers, caused some injury to the fruits in June, 1931, in his locality.

A thrips, Frankliniella (Euthrips) insularis Franklin, was found infesting pigeon pea blossoms at Mayaguez January 2, 1931 (H. Morrison det.).

Larvae of Heliothis virescens Fab. were repeatedly found eating large holes into the green pods of pigeon peas.

The cottony-cushion scale, (Icerya purchasi Mask.) (Morrison det.) was found lightly infesting 50 rose bushes at Santurce February 24 (J. Luciano).

A leaf-footed plant bug, Leptoglossus gonagra Fab., did considerable injury from the latter part of November into December in a 65-acre grapefruit grove at Pueblo Viejo. At the same time about 10 acres of grapefruit were attacked a little west of Bayamon and caused about 10 per cent of the fruits to drop. The bugs were present in enormous numbers and were breeding on the wild balsam apple, Momordica charantia L., which was very common in the grove. The adults flew to the ripening fruits and made small feeding punctures under which the pulp became broken down and often had a slightly rotten odor and a bitter taste. By the first of January all trouble was over and it was reported that very few of the bugs could be found in either grove.

The scarabaeid beetle Ligyrus tumulosus Burn., was common at lights early in June at Aguirre, but scarce the end of the month.

A thrips, Mesothrips ficorum Marchal (also Gynaikothrips uzeli Zimm.), was observed abundant as usual in several parts of the Island, often considerably curling the leaves of West Indian laurel, Ficus nitida.

The coffee shade tree ant or "horniguilla," Myrmelachista ambigua Forel var. rauulorum Wheeler, was generally present throughout the coffee-growing sections, but during the last year and since the hurricane of 1928 it has been less abundant and injurious than formerly, owing to the destruction of so many of the large coffee shade trees; the ants are less abundant or at least less in evidence during wet weather.

A stratiomyid fly, Neorondania chalybea Weid. (C. T. Greene det.), was taken on a potato leaf at Cidra, February 18, 1931 (Faxon and Mills). Previously listed only from Rio Piedras.

An adult of Nezara viridula L. was taken feeding on a pepper fruit at Arecibo, February 24, 1931 (E. G. Anderson and A. S. Mills; Barber det.).

Nezara viridula L. was observed injuring about 20 percent of tomato fruits in a garden patch at Rio Piedras in December (A. S. Mills).



The leaf-tier Pachyzancla periadalis Walk. was present in the field, but was more injurious to a number of experimental plants grown in the greenhouse throughout the year.

Larvae of the greenhouse leaf-tier (Phlyctaenia rubigalis Guen.) were observed doing considerable damage to the foliage of string beans in January and February.

The tobacco leaf miner (~~Gastrophysa~~ operculella Zell.) did considerable damage, more than usual, due to unusually dry weather around Comerio and Caguas, and also in one field near Rio Piedras during February, March, and April.

The citrus rust mite (Phyllocoptes oleivorus Ashm.) was apparently not so injurious on the whole as during the previous year on citrus.

The pineapple mealybug (Pseudococcus brevipes Ckll.) (Det. Morrison), has been generally present but apparently neither common nor injurious. This (according to specimens determined by Dr. Morrison, from Dr. Wolcott) is not P. citri Risso, but is what was listed in Wolcott's "Insectae Portoricensis," p. 281, as P. bromeliae Bouche.

The hemispherical scale (~~Saissetia~~ hemisphaerica Targ.) (H. Morrison det.), was reported as infesting all the fruits on one tree at Juana Diaz, March 13, 1931 (Faxon and Mills). The hemispherical scale, Saissetia hemisphaerica Targ., was reported abundant and causing considerable sooty mould on coffee trees at Guayanilla during April. The hemispherical scale was found to be lightly infesting a 1-acre planting of okra at Trujillo Alto on March 27 (R. Faxon and A. S. Mills; H. Morrison det.).

The onion thrips (Thrips tabaci Lind.) was present as usual wherever onions are grown and often very injurious, more so of course where control measures were not well carried out and in the drier sections and periods.

An adult of the bug Thyanta perditor Fab. was found feeding on tomato fruit at Corozal February 5, 1931 (A. S. Mills; H. G. Barber det.).

## INSECT CONDITIONS IN SALVADOR, CENTRAL AMERICA

by Dr. Salvador Calderon

Direccion General de Agricultura, Salvador

Hammoderus spinipennis Thoms. Bores in the trunk of coffee bushes, especially of young plants.

Callipogon barbatum Fab., Macrobasis diversicornis Haag, Oncideres poecila Bates (?), Psiloptera (Lamproetis) simplex Waterh., and Pachylis hector Stal damaged Albizzia malacocarpa, a tree used as coffee shade, in the eastern part of the State.

Conotrachelus sp. In coffee fruits; probably not injurious.

Apion sp. In fruits of Andira inermis and of coffee.

Idiarthron subquadratum S. Z. & P. Damages coffee by cutting young twigs, leaves, and fruits. This and similar insects are known locally as chacuates, or chacuatetes.

Auxinobasis coffeella Busck. The larva of this moth causes considerable damage to coffee seeds, both in the field and when stored. In the field the larvae are generally found in fruits on the lower branches, or on those that have dropped.

Leucoptera coffeella Staint. Mines in coffee.

Saissetia hemisphaerica Targ., found on coffee, at times abundantly; and S. nigra Weib., found on Coffea liberica and Eugenia malaccensis.

Toxoptera aurantiae Boy. and Toumeyella sp. attack limes.

Cotinis mutabilis G. & P. found in citrus fruits.

Anastrepha serpentina Wied. Bred by Dr. Rafael Gonzalez Sol from avocados, and also reported by him from mangoes. (These are both unusual records for this species.--Bates.)

Rhynchophorus palmarum L. This is the commonest weevil in the buds of dying coconut palms; possibly secondary.

Rhina barbirostris Fab. bores in the terminal buds of coconut palms, and the coyol palm (Acrocomia vinifera). It is possible that it is secondary to a bacterial or fungus attack.

Galerita ruficollis Dej. found in dead coconut palms; probably only incidental.

Azochis griousalis Walk. The larva bores in the terminal branches and buds of the fig (Ficus carica).

Cosmopolites sordidus Germ. found in banana rhizomes.

The following cotton stainers have been found in Salvador: Disdercus ruficollis ; D. obliquus H. S.; D. minus Say; D. flavolineatus Stal; and D. albidiventris Stal.

Alabama argillacea Hbn. The most noticed of the insects attacking cotton leaves.

Laphygma fragiperda S. & A. Causes considerable damage as a cutworm, especially in cotton and corn.

The larvae of Rhodoneura terminalis Walk. have been found in Miguel, boring in the tips of the branches of cotton.

Tomaspis inca Guer. found on cotton.

The following leafhoppers have been found on cotton: Cicadella pulchella Guen. and Oncometopia undata Fab.

Pantomorus femoratus Sharp and Champion was reported from the eastern part of the State, where it was damaging corn.

Mocis repanda Fab. A common cutworm of corn.

Beans are so severely attacked by Pyrausta nubilipennis Champion in the region of Tacachico, Department of La Libertad, that their production is almost impossible.

A species of Apion near griseum Smith was very abundant and damaging in urine seeds of Phaseolus vulgaris in the grounds of the Experiment Station of La Ceiba.

Taeniopoda aurantia Bruner. An important pest of beans in the eastern part of the State.

Schistocerca americana Drury and S. garranensis were especially damaging to beans.

Larvae of Pieris elodia B&V. and P. nonaste L. were found on cabbage.

Eciton coeca Latr. and Ecitonoma pilidum Roger were reported as damaging peanuts in the department of Cuscatlan.

Feltia annexa Treit. was very damaging to tobacco.



The buds of Cycas revoluta are destroyed by Aulacoscelis hoegei Jacoby.

Cleogonus rubetra Fab. Found in the fruits of Andira inermis. (Cabbage angelin.)

Umbonia crassicornis Am. & Serv. was found on Inga preussi.

Poekilontera sp. Found on Cassia grandis, Pithecolobium saman, Inga paterno, and I. punctata.

Dione vanillae L. Observed on Passiflora quadrangularis.

As a larva, Nodonota cretifera Lefevre injures the roots of roses and other plants, whose leaves and flowers are attacked by the adult.

Minthea ruficollis Walk. Found in Spanish cedar wood.

Phelonus aberrans Sharp, observed in seeds of Cassia grandis; Bruchus obtectus Say and Zabrotes (Spermophagus) pectoralis Sharp, found in stored beans; and Bruchus sp. in seeds of Caesalpinia eriostachys; and Pseudopachymerus brasiliensis Thunb. found in seeds of Mucuna sp.

Pachymerus curvipes Latr. In the fruit of the palm Brahea salvadorensis.

Cathorama herbarium Gorham. Found in Phaseolus vulgaris, seeds of Ramirezella ornata, and dried tobacco.

Sitophilus oryzae L. In stored corn.

The larvae of Plodia interpunctella Hbn. live in the pulp of ripe coffee berries, but without damaging the seed.

The following plants have been found subject to the attack of Atta insularis mexicana Smith: Andira inermis, Theobroma cacao, Canarium odoratum, Carica papaya, Chrysobalanus icaco, various species of Citrus, Punica granatum (pomegranate), Pachyrhizus palmatilobus, Mangifera indica (mango), Nicotiana tabacum.

# THE INSECT PEST SURVEY BULLETIN

---

A periodical review of entomological conditions throughout the United States  
issued on the first of each month from March to December, inclusive.

---

---

Volume 11

1931

Index

---

BUREAU OF ENTOMOLOGY  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING





# INDEX TO INSECT PEST SURVEY BULLETIN

VOLUME 11, 1931

(Common names listed separately; see page 746)

	<u>No.</u>	<u>Page</u>
<i>Acanthocoris scaber</i> L. - - - - -	3	146
<i>Acanthoscelides obtectus</i> Say - - - - -	7	489
	9	636
	10	688
<i>Acarina</i> - - - - -	7	419, 477
<i>Achorutes armatum</i> Nic. - - - - -	4	213
<i>Aconura</i> sp. - - - - -	3	150
<i>Acordulecera maura</i> McC. - - - - -	4	197
<i>Acrididae</i> - - - - -	1	8, 10
	2	45
	3	87, 90
	4	155, 164-166
	5	241, 244, 252-254
	6	323, 325, 327-329
	7	419, 421, 424-426
	8	499, 501, 503-505
	9	586-587
	10	652
<i>Acrobasis caryae</i> Grote - - - - -	2	56
	5	280-281
	6	361
	7	450
<i>Acrobasis juglandis</i> LeB. - - - - -	2	57
	3	113
	4	157, 195
	5	242, 280
	6	361
	8	532
<i>Acrobasis palliolella</i> Rag. - - - - -	4	195
	7	450
	8	532
	9	609
<i>Acrobasis</i> spp. - - - - -	5	281
<i>Acrosternum hilaris</i> Say - - - - -	6, 9	357, 613
<i>Adalia bipunctata</i> L. - - - - -	3	97
<i>Adelges abietis</i> L. - - - - -	5	308
	6	395
<i>Adelges strobilobius</i> Kalt. - - - - -	7	474-475
<i>Adelphocoris lineolatus</i> Goeze - - - - -	5	264
<i>Adoretus sinicus</i> Burm. - - - - -	10	681
<i>Aedes aegypti</i> L. - - - - -	7	484
	8	562
<i>Aedes atlanticus</i> D. & K. - - - - -	8	562
<i>Aedes sollicitans</i> Walk. - - - - -	4	227
	7	484
	8	562

<i>Aedes taeniorhynchus</i> Wied. - - - - -	8	562
<i>Aedes trivittatus</i> Coq. - - - - -	8	562
<i>Aedes vexans</i> Meig. - - - - -	9	633
<i>Aegeria apiformis</i> Clerck See		
<i>Alcathoe apiformis</i> Clerck		
<i>Aegeria exitiosa</i> Say - - - - -	1	16
	2	54
	3	107-108
	4	187
	5	274
	6	354-355
	7	444
	8	527
	9	606
	10	660
<i>Aegeria pictipes</i> G. & R. - - - - -	3	108
	7	444
	8	529
<i>Aegeria rutilans</i> Hy. Edw. - - - - -	4	208
	6	375
	7	465
<i>Aegeria scitula</i> Harr. See		
<i>Synanthedon scitula</i> Harr.		
<i>Aegeria tipuliformis</i> L. See		
<i>Synanthedon tipuliformis</i> L.		
<i>Aeolus dorsalis</i> Say - - - - -	3	92
	10	653
<i>Agallia albidula</i> Uhler - - - - -	10	682
<i>Aglais antiona</i> L. See		
<i>Hamadryas antiopa</i> L.		
<i>Aglais californica</i> Bdv. - - - - -	7	480
<i>Agonoderus pallipes</i> Fab. - - - - -	3	96
	4	173
<i>Agonoscellis nubila</i> Fab. - - - - -	3	141
<i>Agrilus anxius</i> Gory - - - - -	5	300
	7	472
	9	622
<i>Agrilus arcuatus</i> Say - - - - -	8	554-555
<i>Agrilus bilineatus</i> Web. - - - - -	3	126
	4	215
	8	554-555
<i>Agrilus ruficollis</i> Fab. - - - - -	1	17
<i>Agriotes mancus</i> Say - - - - -	4	166
	5	255
	10	653
<i>Agromyza inaequalis</i> Mall. - - - - -	4	237
<i>Agromyza ipomoeae</i> Frost - - - - -	4	237
	5	318
	8	576-579
<i>Agromyza simplex</i> Loew - - - - -	1	9,23
	10	668
<i>Agromyza</i> sp. - - - - -	1	36

<i>Agromyza virens</i> Loew - - - - -	10	681
<i>Agrotis c-nigrum</i> L. - - - - -	4	163, 164
	5	246
	6	381
	9	640
	10	653
<i>Agrotis unicolor</i> Walk. - - - - -	4	161-162
	5	247
	10	653
<i>Agrotis ypsilon</i> Rott. - - - - -	1	11
	5	247, 249
	6	331, 412
	10	653
<i>Alabama argillacea</i> Hbn. - - - - -	1	37
	2	77-78
	3	136
	4	237-238
	5	318
	6	349, 411, 413
	7	427, 493, 495
	8	499, 505, 574, 578
	9	583, 587, 639
	10	670, 687
<i>Alcathoe apiformis</i> Clerck - - - - -	3	127
<i>Aleurocanthus woglumi</i> Ashby - - - - -	6	362, 416
	7	495
<i>Aleurodicus (Metaleurodicus) cardini</i> Back - -	7	420, 453
	8	535
	9	611
<i>Aleurothrixus floccosus</i> Mask. - - - - -	10	682
<i>Aleurotrachelus trachoides</i> Back - - - - -	8	576
<i>Aleyrodes citri</i> Riley and Howard See <i>Dialeurodes citri</i> Riley and Howard		
<i>Aleyrodidae</i> - - - - -	7	482
<i>Alsophila pometaria</i> Harr. - - - - -	1	15
	3	125
	4	214
	5	298
<i>Alydus eurinus</i> Say - - - - -	7	420, 459
	10	665-666
<i>Alydus pilosulus</i> H. S. - - - - -	7	420, 459
	10	665-666
<i>Alypia octomaculata</i> Fab. - - - - -	5	279
	7	449
<i>Amblyomma americanum</i> L. - - - - -	6	402
<i>Anitermes arizonensis</i> Bks. - - - - -	1	30
<i>Amphicerus bicaudatus</i> Say - - - - -	3	106
<i>Amphidasis cognataria</i> Guen. - - - - -	8	529
<i>Amphorophora rubi</i> Kalt. - - - - -	1	17-18
<i>Anabrus simplex</i> Hald. - - - - -	6	330
<i>Anacentrus</i> sp. - - - - -	6	348
<i>Anagyrus</i> sp. - - - - -	10	680



<i>Anarsia lineatella</i> Zell. - - - - -	4	187
	5	274
	6	357
	7	444
	9	605
<i>Anasa tristis</i> DeG. - - - - -	4	158, 211
	5	295
	6	324, 378-379, 415
	7	422, 462-463
	8	544-545
	9	618-619
	10	667-668
<i>Anastrepha fratercula</i> Wied. - - - - -	8	573
	9	639
<i>Anastrepha ludens</i> Loew - - - - -	2	74
	3	134
	5	242, 315
	6	407, 415
	7	491
	8	572, 573
	9	638, 639
	10	663
<i>Anastrepha pallens</i> Cog. - - - - -	9	638
	10	663
<i>Anastrepha serpentina</i> Wied. - - - - -	8	573
	10	686
<i>Anastrepha striata</i> Schiner - - - - -	6	415
	8	573
	9	639
<i>Ancylis comptana</i> Froel. - - - - -	4	208
	5	292
	6	375
<i>Andrallus spinidens</i> Fab. - - - - -	3	143
<i>Andrena asteris</i> Robertson - - - - -	9	598
<i>Andrena perplexa</i> Smith - - - - -	4	223
<i>Andricus calvulus</i> O. S. - - - - -	4	218
<i>Andricus clavigerus</i> Ashm. - - - - -	4	218
<i>Andricus cornigerus</i> O. S. - - - - -	4	218
<i>Anisota consularis</i> Dyar - - - - -	9	626
<i>Anisota rubicunda</i> Fab. - - - - -	9	625
<i>Anisota senatoria</i> S. & A. - - - - -	9	626
<i>Anomala innuba</i> Fab. - - - - -	3	93
<i>Anomala orientalis</i> Waterh. - - - - -	4	223
	6	397
	8	508
	9	583, 589
	10	676, 680
<i>Anomala undulata</i> Melsh. - - - - -	3	93
<i>Anopheles maculipennis</i> Meig. - - - - -	9	633
<i>Anopheles punctipennis</i> Say - - - - -	1	29
	9	633

<i>Anopheles quadrimaculatus</i> Say - - - - -	1	29
<i>Anoplocnemis phasiana</i> Fab. - - - - -	3	148
<i>Antestia anchora</i> Thunb. - - - - -	3	148
<i>Anthonomus eugenii</i> Cano - - - - -	6	415
	7	420, 464
	9	641
<i>Anthonomus grandis</i> Boh. - - - - -	6	413
	9	639
	10	669
<i>Anthonomus grandis thurberiae</i> Pierce - - - - -	10	669
<i>Anthonomus scutellaris</i> Lec. - - - - -	9	607, 608
<i>Anthonomus signatus</i> Say - - - - -	3	122
	4	157, 207
	6	373
<i>Anthrenus scrophulariae</i> L. - - - - -	9	635-636
<i>Anticarsia gemmatilis</i> Hbn. - - - - -	3	137
	5	242, 264
	7	434, 493, 495
	8	519
	9	596
	10	658-659
<i>Antipus laticlavus</i> Forst. - - - - -	6	389
<i>Anuraphis bakeri</i> Cowan - - - - -	7	432
	8	516
<i>Anuraphis cardui</i> L. - - - - -	6	358
<i>Anuraphis helichrysi</i> Kelt. - - - - -	7	432
<i>Anuraphis maidi-radicis</i> Forbes - - - - -	6	341
<i>Anuraphis roseus</i> Baker - - - - -	1	8, 13
	2	50
	3	103-104
	4	158-159, 182-183
	5	242, 266-267
	9	602
	10	661
<i>Anuraphis tulipae</i> Boyer - - - - -	5	310
<i>Anuraphis viburnicola</i> Gill. See		
<i>Aphis viburnicola</i> Gill.		
<i>Aonidia shastae</i> Coleman - - - - -	9	628
<i>Apanteles crambi</i> Weed - - - - -	8	518
<i>Apanteles flaviventris</i> Cress. - - - - -	9	646
<i>Apanteles phalerata</i> Harr. - - - - -	4	156, 172-173
	6	336
	8	518
<i>Apanteles phyllira</i> Drury - - - - -	6	338
	7	436-437
	8	518
	9	598
	10	658
<i>Apanteles rectilinea</i> French - - - - -	4	173
	6	338
	10	658

<i>Aphate francisco</i> Fab. - - - - -	3	135
	4	235
<i>Aphis sordidus</i> Fab. - - - - -	3	148
<i>Aphelinus chrysomphali</i> Mercet - - - - -	9	646
<i>Aphiidae</i> - - - - -	1	13, 25, 27
	2	43, 49-50, 61, 80
	3	86, 103, 114, 127
	4	156, 181-182, 208, 223
	5	266, 286
	6	390
<i>Aphiochaeta</i> sp. - - - - -	9	620
<i>Aphis asclepiadis</i> Fitch - - - - -	2	80
<i>Aphis forbesi</i> Weed - - - - -	1	23
	3	123
	6	375
<i>Aphis gossypii</i> Glov. - - - - -	1	18-19, 24, 35, 37, 38, 39
	2	80
	3	123
	6	377, 400, 414, 415
	7	462
	8	544, 575
	9	617
<i>Aphis illinoisensis</i> Shin. - - - - -	5	278
<i>Aphis maidis</i> Fitch - - - - -	6	341, 348
	7	432, 435, 495
	8	515
<i>Aphis medicaginis</i> Koch - - - - -	2	57
<i>Aphis pomi</i> DeG. - - - - -	2	49, 50, 61
	3	103, 104-105
	4	182
	5	266
	6	350
	10	661
<i>Aphis ribariae</i> Oest. - - - - -	5	278
<i>Aphis rumicis</i> L. - - - - -	6	371
	9	643
<i>Aphis sambucifoliae</i> Fitch - - - - -	3	129
<i>Aphis spiraecola</i> Patch - - - - -	1	18
	2	44, 57
	3	114
	4	198
<i>Aphis viburnicola</i> Gill. - - - - -	4	227
<i>Apon</i> sp. - - - - -	10	686, 687
<i>Archips argyrospila</i> Wolt. See		
<i>Cacoccia argyrospila</i> Wolt.		
<i>Arge calcanea</i> Say - - - - -	7	474
<i>Arge nectoralis</i> Leach - - - - -	7	472
<i>Arvelius albomaculatus</i> DeG. - - - - -	2	77
<i>Aucia protodice</i> B. & L. - - - - -	6	414
	8	547
	9	616



<i>Ascia rapae</i> L. - - - - -	1	23
	2	62
	3	120, 121
	4	204-205
	5	290-291
	6	372-373, 414
	7	460
	8	541
	9	615-616
	10	666-667
<i>Aserica castanea</i> Arrow See		
<i>Autoserica castanea</i> Arrow		
<i>Aspidiotiphagus citrinus</i> Craw. - - - - -	9	646
<i>Aspidiotus cyanophylli</i> Sign. - - - - -	2	68
<i>Aspidiotus destructor</i> Sign. - - - - -	1	38
	8	578
	9	642
<i>Aspidiotus hederæ</i> Vallot - - - - -	3	130
	4	226
	5	311
	6	398
	7	482
<i>Aspidiotus lotaniæ</i> Sign. - - - - -	1	38
<i>Aspidiotus perniciosus</i> Const. - - - - -	1	8, 13-14
	2	43, 52-53
	3	106-107
	4	159, 184
	5	244
	6	353-354
	7	441
	8	500, 523-524
	9	603-604, 646, 647
	10	662
<i>Aspidiotus pini</i> Const. - - - - -	4	221
<i>Aspidiotus sacchari</i> Coll. - - - - -	4	235
	5	317
<i>Aspongopus fuscus</i> Westw. - - - - -	3	144
<i>Asterolecanium bambusæ</i> Bdv. - - - - -	9	647
	10	682
<i>Asterolecanium lanceolatum</i> Green - - - - -	9	647
<i>Asterolecanium variolosum</i> Ratz. - - - - -	4	218
<i>Asynonychus godmani</i> Crotch - - - - -	2	56
	5	310
	8	500, 540
	9	611
<i>Athysanus</i> sp. - - - - -	3	150
<i>Atta cephalotes</i> L. - - - - -	6	415
	9	641
<i>Atta fervens</i> Say See		
<i>Atta cephalotes</i> L.		
<i>Atta insularis mexicana</i> Smith - - - - -	10	688
<i>Atta insularis texana</i> Buckl. - - - - -	8	535

<i>Aulacaspis pentagona</i> Targ. - - - - -	5	276
	7	446
	8	559, 577
<i>Aulacoscelis hoegei</i> Jacoby - - - - -	10	688
<i>Aulocara ellioti</i> Thos. - - - - -	5	254
<i>Autographa biloba</i> Steph. - - - - -	6	343
<i>Autographa brassicae</i> Riley - - - - -	4	205, 223
	5	310
	6	344, 373
	7	459
	8	502, 541
	9	584, 615, 619
<i>Autographa falcifera</i> Kby. - - - - -	5	295
	9	619
<i>Autographa gamma californica</i> Speyer - - - - -	6	413
	7	434
<i>Autographa</i> sp. - - - - -	6	344
<i>Autoserica castanea</i> Arrow - - - - -	7	428
	8	508
	9	588-589
	10	677
<i>Auximobasis coffeela</i> Busck - - - - -	10	686
<i>Azochis gripusalis</i> Walk. - - - - -	9	640
	10	687
<i>Baccha clavata</i> Fab. - - - - -	3	114
<i>Bactrocera curcurbitae</i> Coq. - - - - -	10	681
<i>Bagrada picta</i> Fab. - - - - -	3	141
<i>Balaninus caryae</i> Horn See		
<i>Curculio caryae</i> Horn		
<i>Barathra configurata</i> Walk. - - - - -	6	331
	10	653
<i>Barini</i> - - - - -	8	519
<i>Baris torquata</i> Oliv. - - - - -	10	682
<i>Basilona imperialis</i> Drury See		
<i>Eacles imperialis</i> Drury		
<i>Benbecia marginata</i> Harr. - - - - -	7	448
	8	529
<i>Bibio albipennis</i> Say - - - - -	3	128
<i>Blapstinus gregalis</i> Casey - - - - -	5	241, 259
<i>Blepharida rhois</i> Forst. - - - - -	5	312
<i>Blissus leucopterus</i> Say - - - - -	1	11
	2	43, 47
	3	85, 95-96
	4	155, 171-172
	5	241, 260-261
	6	323, 338-339
	7	419, 422, 430-431
	8	499, 514-515, 572-573
	9	584, 595, 645, 646
	10	655
<i>Blissus leucopterus</i> var. <i>insularis</i> Barber - - -	10	682

Bostrichidae - - - - -	4	231
Bovicola caprae Gurlt. - - - - -	9	647
Brachyacma palviger a Wlsm. - - - - -	10	682
Brachyplatys subaeneus Westw. - - - - -	3	138
Brachyrhinus ovatus L. - - - - -	4	207
	5	292, 312
	6	374
	7	465, 487
Brachyrhinus rugostriatus Goeze - - - - -	4	207
	5	292
Brachyrhinus spp. - - - - -	2	64
Brachyrhinus sulcatus Fab. - - - - -	4	227
	5	312
	6	400
Brachys floricola Kerr. - - - - -	6	391
Brachystola magna Gir. - - - - -	6	330
Brevicoryne brassicae L. - - - - -	1	22, 39
	2	44, 63, 80
	3	121-122
	4	157, 206
	6	415
	7	460
	9	616
Brochymena quadripustulata Fab. - - - - -	3	110
	8	532
Bruchophagus fumebris How. - - - - -	7	433
Bruchus brachialis Fahraeus - - - - -	6	324, 347
	7	435
	10	659
Bruchus pisorum L. - - - - -	7	489
Bruchus sp. - - - - -	10	688
Bryobia praetiosa Koch - - - - -	1	16, 31
	2	49
	3	130
	4	231
Bryobia sp. - - - - -	2	71
Bucculatrix canadensisella Chamb. - - - - -	6	384
	7	472
	8	551
	9	584, 621-622
	10	675
Bucculatrix thurberiella Busck - - - - -	6	414
Bythoscopus sp. - - - - -	3	150
Byturus unicolor Say - - - - -	4	193
	7	448
	8	530
Cacoecia argyrognila Walk. - - - - -	2	53
	3	102-103
	4	181
	5	271
	6	353, 331
	8	555
	9	600
Cacoecia conflictana Walk. - - - - -	5	308
	6	325, 394
	10	675



<i>Cacoecia fervidana</i> Clem. - - - - -	7	477
<i>Cacoecia fumiferana</i> Clem. See		
<i>Harmologa fumiferana</i> Clem.		
<i>Cacoecia negundana</i> Dyar - - - - -	5	301
<i>Cacoecia rosaceana</i> Harr. - - - - -	5	311
<i>Cacoecia semiferana</i> Walk. - - - - -	5	301
<i>Caenocoris sanguinarius</i> Stal - - - - -	3	149
<i>Calaphis</i> sp. - - - - -	8	551
<i>Calendra germari</i> Horn - - - - -	6	341
<i>Calendra granaria</i> L. See		
<i>Sitophilus granaria</i> L.		
<i>Calendra oryzae</i> L. See		
<i>Sitophilus oryzae</i> L.		
<i>Calendra (Sphenophorus)</i> spp. - - - - -	7	437
<i>Caliroa aethiops</i> Fab. - - - - -	4	226
	5	311
	6	399
<i>Calisto pulchellus</i> Lathy - - - - -	9	645
<i>Callidium antennatum</i> Newm. - - - - -	9	624
<i>Callipogon barbatum</i> Fab. - - - - -	10	686
<i>Callipterus juglandis</i> Frisch - - - - -	6	396
<i>Callirhytis aquaticae</i> Ashm. - - - - -	2	67
<i>Callosobruchus chinensis</i> L. - - - - -	10	682
<i>Calpodes ethlius</i> Cram. - - - - -	6	410
	7	481, 494
	8	579
<i>Cameraria conglomeratella</i> Zell. - - - - -	2	67
	8	555
<i>Camnula pellucida</i> Scudd. - - - - -	3	90
	6	327
	7	424, 426
	10	652
<i>Camponotus caryae</i> subsp. <i>discolor</i> Emery - - - - -	2	73
<i>Camponotus herculeanus</i> L. - - - - -	1	31
<i>Camponotus herculeanus pennsylvanicus</i> DeG. - - - - -	3	132
	4	230
	5	314
<i>Camptylenchia latipes</i> Say - - - - -	8	517
<i>Cantao ocellatus</i> Thunb. - - - - -	3	139
<i>Cantuaris nuttalli</i> Say See		
<i>Lytta nuttali</i> Say		
<i>Cantheconidea furcellata</i> Wolff. - - - - -	3	143
<i>Cappaea taprobanensis</i> Dall. - - - - -	3	140
<i>Carpocapsa pomonella</i> L. - - - - -	1	8, 14-15
	2	43, 50-51
	3	85, 89, 100-101
	4	156, 178-179
	5	242, 268-270
	6	324, 350-352
	7	419, 422, 438-440, 451
	8	521-522
	9	584, 599-600
	10	659

<i>Carpocapsa toreuta</i> Grote - - - - -	1	26
<i>Catacanthus incarnatus</i> Drury - - - - -	3	141
<i>Cathorana herbarium</i> Gorham - - - - -	10	688
<i>Catocala briseis</i> Edwards - - - - -	7	472
<i>Catocala viduata</i> Guen. - - - - -	6	361
<i>Cecidomyia ocellaris</i> O. S. - - - - -	5	305
<i>Cecidomyia verrucicola</i> O. S. - - - - -	7	475
<i>Celana sorghiella</i> Riley - - - - -	9	596
<i>Celatoria diabroticae</i> Cog. - - - - -	6	377
	7	459
<i>Celerio lineata</i> Fab. See <i>Sphinx lineata</i> Fab.		
<i>Cenostoma coffeellum</i> Staint. - - - - -	6	416
<i>Cephus cinctus</i> Nort. - - - - -	3	88
	6	336
	7	421
	8	501
<i>Ceratanhis lataniac</i> Bdv. - - - - -	1	38
	2	80
	10	682
<i>Ceratipsocus</i> sp. - - - - -	8	550
<i>Ceratitis capitata</i> Wied. - - - - -	10	681
<i>Ceratonis catalpae</i> Bdv. - - - - -	4	216
	6	385
	7	472
	8	552
	9	623
<i>Cerconilae</i> - - - - -	5	307
<i>Ceresa bubalus</i> Fab. - - - - -	9	602
<i>Ceromasia sphenophori</i> Vill. - - - - -	10	680
<i>Ceroplastes floridensis</i> Comst. - - - - -	1	38
<i>Cerotoma denticornis</i> Fab. - - - - -	1	35
	3	136
	10	682
<i>Cerotoma trifurcata</i> Forst. - - - - -	3	123
	4	210
	6	342
	7	435
	8	540
	9	615
<i>Ceuthophilus maculatus</i> Harr. - - - - -	6	330
<i>Ceuthophilus</i> sp. - - - - -	9	630
<i>Chaetocnema apricaria</i> Suffrian - - - - -	8	576
<i>Chaetocnema confinis</i> Cr. - - - - -	4	211
<i>Chaetocnema pulicaria</i> Welsh. - - - - -	3	96
	4	173
	9	595
<i>Chaitophorus lyropictus</i> Kess. See <i>Periphyllus lyropictus</i> Kess.		
<i>Chalcodermus aeneus</i> Boh. - - - - -	2	49
	6	345
	8	500, 519

Chalepus dorsalis Thunb. - - - - -	7	475
	9	625
Chelymorpha cassidea Fab. - - - - -	5	296
	6	380
Chermes abietis L. - - - - -	8	557
Chermes pinicorticis Fitch - - - - -	4	220
	6	393
	7	478
Chermes pinifoliae Fitch - - - - -	7	478
Chilocorus cacti L. - - - - -	5	309
Chilo simplex Butl. - - - - -	10	681
Chilo sp. - - - - -	6	413
Chionaspis americana Johns. - - - - -	7	474
Chionaspis etrusca Leon. - - - - -	5	309
Chionaspis euonymi Comst. - - - - -	1	28
	2	69
	3	129
	4	225
	5	310
	7	481, 482
	8	560-561
Chionaspis longiloba Cooley - - - - -	4	226
	9	608
Chionaspis pinifoliae Fitch - - - - -	2	68
	3	126
	4	221
	7	478
	8	556
	9	624, 628
Chionaspis pinifoliae heterophyllae Cooley - - -	8	556
Chionaspis quercus Comst. - - - - -	6	391
Chirida guttata Oliv. - - - - -	4	212
Chironomidae - - - - -	4	228
Chlorochroa sayi Stal - - - - -	5	259
	6	337
Chorizagrotis agrestis Grote - - - - -	5	248
Chorizagrotis auxiliaris Grote - - - - -	3	91
	4	162, 164
	5	247, 248
	6	331
	7	427
	10	653
Chorizagrotis sp. - - - - -	5	249
Chrysobothris femorata Oliv. - - - - -	2	67
	3	113
	5	272
	7	451
	8	549
	9	601, 625
Chrysocerus grandis Thunb., baro Fab. - - - - -	3	140



Chrysomphalus aonidum L. - - - - -	1	19,34
	3	115
	6	415
	7	452
	8	534
	9	610
Chrysomphalus aurantii Maske. - - - - -	1	19
	4	198
	6	415
	8	534
Chrysomphalus dictyosperni Morg. - - - - -	1	38
Chrysomphalus ficus Ashm. See - - - - -		
Chrysomphalus aonidum L.		
Chrysomphalus obscurus Comst. - - - - -	3	114
	8	533,555
	9	627
Chrysomphalus perseae Const. - - - - -	4	221
Chrysomphalus tenebricosus Const. - - - - -	1	18
Chrysops costatus Fab. - - - - -	9	647
Chrysops spp. - - - - -	8	565
Chrysops univittatus Meig. - - - - -	8	563
Cicadella coffeella Coz. - - - - -	10	683
Cicadella instrata Fowler - - - - -	1	39
Cicadella pulchella Guen. - - - - -	10	687
Cicadella sirena Stal - - - - -	10	683
Cicadellidae - - - - -	2	50
	3	86,105-106
	4	156,184
	5	242,271-272
	6	353
	7	434,437,440
	8	500,523
	9	584,602-603
	10	662
Cimbex americana Leach - - - - -	6	396
Cimex lectularius L. - - - - -	2	70
	7	486
Cirphis latiuscula H. S. - - - - -	3	137
	7	495
Cirphis sp. - - - - -	4	184
Cirphis unipuncta Haw. - - - - -	3	91
	4	155,160
	5	241,249-251
	6	331,332-333
	8	505
	10	657
Citheronia sepulchralis G. & R. - - - - -	8	556
Cladius isomerus Nort. - - - - -	6	399
Clastoptera obtusa Say - - - - -	4	197
Clavigralla horrens Dohrn - - - - -	3	147
Cleogonus rubetra Fab. - - - - -	10	686
Clepsis cockerellana Kearf. See		
Tortrix cockerellana Kearf.		

<i>Cletus bipunctatus</i> H. S. - - - - -	3	147
<i>Cletus punctiger</i> Dall. - - - - -	3	147
<i>Clorans modestus</i> Dist. - - - - -	3	146
<i>Clovio puncta</i> Walk. - - - - -	3	150
<i>Cnephiasia longana</i> Haw. - - - - -	5	292
<i>Cnibocampa flavescens</i> Walk. - - - - -	7	469
<i>Coccidae</i> - - - - -	1	13,19,27
	6	362-368
	8	577
<i>Coccinella trifasciata</i> L. - - - - -	3	97
<i>Coccophagus gurneyi</i> Comp. - - - - -	4	198-199
	10	663
<i>Coccus hesperidum</i> L. - - - - -	1	38
	2	68
	3	115
	5	283
<i>Coccus viridis</i> Green - - - - -	4	235
	6	410
	9	642,646
	10	681
<i>Cochliomyia macellaria</i> Fab. - - - - -	5	313
	7	485
	8	565
<i>Cocytius antaeus</i> Drury - - - - -	1	38
<i>Coelosternus sulcatulus</i> Boh. - - - - -	1	34
<i>Colaspis brunnea</i> Fab. - - - - -	6	341,359
	8	547
<i>Coleophora caryaefoliella</i> Clem. - - - - -	4	196
	5	280,303
	7	450
	8	532
<i>Coleophora fletcherella</i> Fern. - - - - -	4	196
<i>Coleophora laricella</i> Hbn. - - - - -	4	158,217
	5	245,304
	6	389
	9	625
	10	675
<i>Coleophora limosipennella</i> Dm. - - - - -	6	366
<i>Coleophora malivorella</i> Riley - - - - -	3	102
	4	181
	9	600
<i>Coleophora pruniella</i> Clem. - - - - -	4	192
	5	276-277
<i>Coleophora salmani</i> Heinr. - - - - -	4	216
	5	301
	6	384
<i>Coleophora</i> sp. - - - - -	2	64
<i>Collenbola</i> - - - - -	3	133
<i>Colophonella umicola</i> Fitch - - - - -	5	302
	6	386
<i>Columbicola columbae</i> L. - - - - -	9	647
<i>Conusilura concinnata</i> Meig. - - - - -	3	124
<i>Constactiella sabalis</i> Const. - - - - -	9	647
<i>Conchaspis angraeci</i> Ckll. - - - - -	10	683

<i>Conophthorus coninenda</i> Schwarz - - - - -	6	392,395
<i>Conotelus obscurus</i> Er. - - - - -	9	631
<i>Conotrachelus aratus</i> Gern. - - - - -	4	127
<i>Conotrachelus crataegi</i> Walsh - - - - -	7	447
<i>Conotrachelus nenuphar</i> Hbst. - - - - -	1	16
	2	44,55
	3	86,109-110
	4	156,188-190
	5	242,274-275
	6	338-338
	7	444-446
	8	527-528
	9	606-607
	10	661
<i>Conotrachelus</i> sp. - - - - -	10	686
<i>Contarinia pyrivora</i> Riley - - - - -	3	111
	4	191
	5	276
	6	357
<i>Contarinia sorghicola</i> Coq. - - - - -	8	517
<i>Copitarsia consueta</i> Walk. - - - - -	8	572
<i>Coptocycla</i> sp. - - - - -	8	579
<i>Coptosoma punctatissima</i> Mont. - - - - -	3	138
<i>Coptosoma variegatum</i> Mont. - - - - -	3	138
<i>Corizus hyalinus</i> Fab. - - - - -	9	647
	10	683
<i>Corythaica monacha</i> Stal - - - - -	1	38
	2	77
	8	579
<i>Corythucha arcuata</i> Say - - - - -	6	391
<i>Corythucha ciliata</i> Say - - - - -	8	558
<i>Corythucha coelata</i> Uhl. - - - - -	7	440
<i>Corythucha confraterna</i> Gibson - - - - -	7	479
<i>Corythucha floridana</i> Heid. - - - - -	8	555
<i>Corythucha gossypii</i> Fab. - - - - -	1	35,57
	2	76
	4	236
	5	318
	6	410
	7	493
	8	576
	9	644
<i>Corythucha marmorata</i> Uhl. - - - - -	6	397
	7	481
<i>Cosmopolites sordidus</i> Gern. - - - - -	1	34
	4	235,236
	8	578
	9	640
	10	687
<i>Cosmoscarta binaculata</i> Walk. - - - - -	3	170
<i>Cossula magnifica</i> Streck. - - - - -	2	57
	4	196



<i>Cotinis mutabilis</i> G. & P. - - - - -	10	686
<i>Cotinis mutabilis malina</i> O. Janson - - - - -	6	416
<i>Cotinis nitida</i> L. - - - - -	3	93
<i>Crambidae</i> - - - - -	6	381
<i>Crambus caliginosellus</i> Clem. - - - - -	5	297
	7	436
<i>Crambus dorsipunctellus</i> Kearf. - - - - -	7	421
<i>Crambus mutabilis</i> Clem. - - - - -	7	421, 436
	9	597
<i>Crambus</i> spp. - - - - -	5	242, 244, 262
	6	345-346
	7	419, 435-436
	8	517-518
	9	597-598
	10	657
<i>Crambus teterrellus</i> Zinck. - - - - -	7	435, 436
	8	518
	9	597
	10	657
<i>Crambus trisectus</i> Walk. - - - - -	5	262
	6	346
	7	421, 435, 436
	9	597
	10	657
<i>Crenastogaster ashmeadi</i> Mayr - - - - -	8	567
<i>Creontiades debilis</i> Van D. - - - - -	2	79
<i>Crioceris asparagi</i> L. - - - - -	5	243, 293
<i>Crioceris duodecimpunctata</i> L. - - - - -	5	293
<i>Crioceris</i> spp. - - - - -	4	209
<i>Critheus lineatifrons</i> Stal - - - - -	3	142
<i>Cryptococcus fagi</i> Baer. - - - - -	4	215
	7	471
	10	676
<i>Cryptolaemus montrouzieri</i> Muls. - - - - -	6	363
	7	492
	10	663
<i>Cryptomyzus ribis</i> L. See		
<i>Myzus ribis</i> L.		
<i>Cryptorhynchus lapathi</i> L. - - - - -	4	222
	8	557
<i>Cryptotermes brevis</i> Walk. - - - - -	6	412
<i>Ctenocephalides canis</i> Curtis - - - - -	4	228
	6	401-402
	8	564
<i>Ctenocephalides felis</i> Bouche - - - - -	4	227
	8	564
<i>Ctenocephalides</i> spp. - - - - -	4	227-228
	7	485
	8	564
<i>Ctenocephalus canis</i> Curtis See		
<i>Ctenocephalides canis</i> Curt.		
<i>Ctenocephalus felis</i> Bouche See		
<i>Ctenocephalides felis</i> Bouche		
<i>Culex pipiens</i> L. - - - - -	9	633
<i>Culex quinquefasciatus</i> Say - - - - -	7	484
<i>Culex tarsalis</i> Coq. - - - - -	9	633
<i>Culicinae</i> - - - - -	7	423
	8	562

<i>Culicoides biguttatus</i> Coq. - - - - -	7	485
<i>Culicoides canithorax</i> Hoffn. - - - - -	4	227
	8	563
	9	633
<i>Culicoides furens</i> Poey - - - - -	7	485, 486
	8	563
	9	633
<i>Culicoides melleus</i> Coq. - - - - -	7	485
	8	563
	9	633
<i>Culicoides</i> sp. - - - - -	6	401
<i>Culicoides variipennis</i> Hoffn. - - - - -	7 <sup>8</sup>	486
<i>Curculio caryae</i> Horn - - - - -	7	451
	8	533
<i>Curculionidae</i> - - - - -	6	392
<i>Cycloneda sanguinea</i> L. - - - - -	2	76
	10	683
<i>Cydnus indicus</i> Westw. - - - - -	3	139
<i>Cylas fornicarius</i> Fab. - - - - -	1	36
	3	136
	4	237
	6	415
	9	644
	10	665
<i>Cylindrocoptidae</i> - - - - -	6	392
<i>Cyllene robiniae</i> Forst. - - - - -	8	554
	9	625
<i>Cynthia cardui</i> L. - - - - -	5	252
	6	323, 333-334
	7	422, 427
	10	678
<i>Cyrtorhinus mundulus</i> Bredd. - - - - -	10	680
<i>Daclera</i> sp. - - - - -	3	148
<i>Dactylopius destructor</i> Comst. - - - - -	9	639
<i>Dasyneura leguminicola</i> Lintn. - - - - -	6	345
	7	432
<i>Datana contracta</i> Walk. - - - - -	9	626
<i>Datana intererrina</i> G. & R. - - - - -	5	281
	6	361, 396
	7	423, 450, 479
	8	558
	9	628
<i>Datana ministra</i> Drury - - - - -	7	440
	8	502
	9	626
<i>Deilephila lineata</i> Fab. See		
<i>Sphinx lineata</i> Fab.		
<i>Deltoccephalus configuratus</i> Uhl. - - - - -	5	289
<i>Deltoccephalus inimicus</i> Say - - - - -	7	437
<i>Deltoccephalus</i> sp. - - - - -	3	180
<i>Dendroctonus adjunctus</i> Blandf. - - - - -	4	234
<i>Dendroctonus brevicornis</i> Lec. - - - - -	5	307

<i>Dendroctonus frontalis</i> Zimm. - - - - -	6	392
	9	627
	10	674
<i>Dendroctonus mexicanus</i> Horv. - - - - -	4	234
<i>Dendroctonus monticolae</i> Hook. - - - - -	6	392
	10	673-674
<i>Dendroctonus</i> spp. - - - - -	5	299
<i>Ieraecoris</i> sp. - - - - -	3	149
<i>Dermomyces gallinae</i> L. - - - - -	3	131
	6	404
<i>Desmia funeralis</i> Hbn. - - - - -	7	449
<i>Diabrotica balteata</i> Lec. - - - - -	1	8,20
	8	540
	9	612
	10	668
<i>Diabrotica duodecimpunctata</i> Fab. - - - - -	1	8,12
	2	63-64
	3	86,117
	4	157,172,201
	5	284
	6	342,377-378
	8	544
<i>Diabrotica graminea</i> Baly - - - - -	1	35
	3	136
	3	410
	7	493,494
	8	575,576
<i>Diabrotica innuba</i> Fab. - - - - -	7	494
<i>Diabrotica soror</i> Lec. - - - - -	1	8,20-21
	2	44,60
	3	87,117-118
	4	202
	5	234
	6	377
	7	459
	8	544
<i>Diabrotica vittata</i> Fab. - - - - -	1	24
	2	63,64
	3	116
	4	156,157,186,200-201
	5	243,294
	6	326,375-377
	7	461-462
	8	543
	9	617
<i>Dialeurodes citri</i> Riley & Horv. - - - - -	1	19
	2	59
	3	115
	5	283
	6	362
	7	452
	8	533-534
	9	584,609-610,639



Diaphania hyalinata L. - - - - -	2	77
	5	317
	7	494
	8	501, 543, 575, 579
	9	618, 644
Diaphania nitidalis Stoll - - - - -	1	24
	4	210, 234, 237
	6	375
	7	461, 494
	8	501, 543
	9	584, 618
	10	668
Diaprepes abbreviatus L. - - - - -	3	135
	7	492
Diaprepes spengleri L. - - - - -	1	74
	2	77
	6	409-410
	7	492
	8	577
	9	643
Diarthronomyia hypogaea Loew - - - - -	2	69
	3	129
Diaspis boisduvali Sign. - - - - -	9	646
Diaspis carueli Targ. - - - - -	6	388
	7	474
Diaspis echinocacti opuntiae Coll. - - - - -	10	683
Diatraea crambidoides Grote - - - - -	5	262
	8	514, 517
	9	594
Diatraea saccharalis Fab. - - - - -	1	8, 12, 33
	2	73, 76
	3	98, 135
	4	177, 235
	5	261, 265
	6	347-348
	8	520, 577
	9	598, 639, 642
	10	658
Diatraea sp. - - - - -	6	413
Diatraea zeacolella Dyar See		
Diatraea crambidoides Grote		
Dichelonyx fuscata Lec. - - - - -	3	100
Dichomeris marginellus Fab. - - - - -	4	225-226
	6	388
	7	474
Dichomeris piperata Wlsm. - - - - -	1	36
	4	237
	5	318
	6	410
	7	433
	8	577

<i>Dicyphus luridus</i> Gibson - - - - -	1	33-34
<i>Dicyphus minimus</i> Uhler - - - - -	7	467
<i>Dicyphus prasinus</i> Gibson - - - - -	1	33-34
<i>Dienches feroralis</i> Dohrn - - - - -	3	148, 149
<i>Digonichaeta setipennis</i> Fall. - - - - -	4	230
<i>Dilachnus thujafolia</i> Theob. - - - - -	1	27
	2	69
	3	128
	4	224
<i>Dinoderus minutus</i> Fab. - - - - -	8	570
	9	635
<i>Dinomachus rhacinus</i> Dist. - - - - -	3	148, 149
<i>Dione vanillae</i> L. - - - - -	10	683, 688
<i>Dioryctria reniculella</i> Grote - - - - -	6	392
<i>Diplorhinus furcatus</i> Westw. - - - - -	3	144
<i>Disonycha laevigata</i> Jacoby - - - - -	10	683
<i>Dissosteira carolina</i> L. - - - - -	6	327
	7	424, 426
<i>Ditropinotus aureoviridis</i> Cwfd. - - - - -	4	171
	5	259
	6	336
<i>Dorymyrmex pyramicus</i> Roger - - - - -	8	567, 568
<i>Drabescus angulatus</i> Sign. - - - - -	3	150
<i>Dreyfusia piceae</i> Ratz. - - - - -	6	326
<i>Dumubia longina</i> Dist. - - - - -	3	150
<i>Dyscinetus barbatus</i> Fab. - - - - -	5	317
	7	492
	8	574
	9	642
<i>Dyscinetus trachypygus</i> Burm. - - - - -	3	98
<i>Dysdercus albidiventris</i> Stal - - - - -	10	687
<i>Dysdercus andreae</i> L. - - - - -	1	37
	2	78
	3	137
	4	238
	6	412
	7	493
	8	575, 578
<i>Dysdercus flavolimbatus</i> Stal - - - - -	10	687
<i>Dysdercus megalopygus</i> Bredd. - - - - -	3	149
<i>Dysdercus mimus</i> Say - - - - -	10	687
<i>Dysdercus neglectus</i> Uhl. - - - - -	1	37
	6	412
<i>Dysdercus obliquus</i> H. S. - - - - -	10	687
<i>Dysdercus ruficollis</i> L. - - - - -	10	687
<i>Dyslobus decoratus</i> Lec. - - - - -	4	207
<i>Dyslobus ursinus</i> Horn - - - - -	4	207
<i>Eacles imperialis</i> Drury - - - - -	9	626
<i>Eantis pallida</i> Feld. - - - - -	1	38, 39
<i>Echidnophaga gallinacea</i> Westw. - - - - -	4	229
	6	403
<i>Eciton coeca</i> Latr. - - - - -	10	687
<i>Ecstatorma ruidum</i> Roger - - - - -	10	687

<i>Ehrhornia cupressi</i> Ehrh. - - - - -	4	216
	6	385
<i>Elasmopalpus lignosellus</i> Zell. - - - - -	3	122
	6	341
	8	514, 519, 540
	9	615
<i>Elateridae</i> - - - - -	1	11
	2	80
	3	88, 92
	4	155, 166-167, 234
	5	241, 244, 254-256
	6	325, 334-335, 413
	7	427
	8	506
	9	588
	10	653-654
<i>Eleodes opaca</i> Say - - - - -	5	259
	6	337
	9	583, 588
<i>Ellopia fiscellaria</i> Guen. - - - - -	3	89
	8	553
<i>Ellopia fiscellaria</i> Guen., var. <i>lugubrosa</i> Hulst - - - - -	10	675
<i>Ellopia somnaria</i> Hulst - - - - -	7	476
<i>Empoa rosae</i> L. See <i>Typhlocyba rosae</i> L.		
<i>Erpoasca fabae</i> Harr. - - - - -	1	36
	5	289
	6	324, 362
	7	456-457, 459, 466, 494
	8	523, 577
	9	603, 613
<i>Erpoasca fabalis</i> De Long - - - - -	8	575, 577, 579
<i>Erpoasca jabanee</i> De Long - - - - -	3	136
<i>Erpoasca rosae</i> L. - - - - -	5	271
<i>Erpoasca</i> sp. - - - - -	1	35, 37
	2	77
	5	318
	10	681
<i>Enchenopa binotata</i> Say - - - - -	6	397
	9	629
<i>Engytatus geniculatus</i> Reuter - - - - -	7	420, 457
	10	667
<i>Ennomos subsignarius</i> Hbn. - - - - -	6	383
	7	474
<i>Entomoscelis adonidis</i> Pallas - - - - -	5	291
<i>Epicauta cinerea</i> Forst. - - - - -	5	284
	6	364
	7	454
	8	536
<i>Epicauta lemniscata</i> Fab. - - - - -	6	364
	7	454
	8	536, 537



<i>Epicauta maculata</i> Say - - - - -	8	536, 537
<i>Epicauta marginata</i> Fab. - - - - -	8	536, 537
	9	612
<i>Epicauta pennsylvanica</i> DeG. - - - - -	8	536, 537
<i>Epicauta</i> spp. - - - - -	6	364
	9	612
<i>Epicauta vittata</i> Fab. - - - - -	8	537
	9	612
<i>Epilachna borealis</i> Fab. - - - - -	4	210
	5	295
<i>Epilachna corrupta</i> Muls. - - - - -	4	157, 209-210
	5	243, 289-290
	6	324, 370-371, 414
	7	420, 457, 459
	8	500, 538-539
	9	614-615, 641
	10	635
<i>Epilachna varibestis</i> Muls. - - - - -	6	414
<i>Epinotia nanana</i> Treit. - - - - -	4	221-222
	6	394
<i>Epitrix cucumeris</i> Harr. - - - - -	1	33, 35, 36
	2	77
	3	136
	5	288
	6	367-368
	7	456, 467
	9	613
	10	683
<i>Epitrix fuscula</i> Crotch - - - - -	5	295
<i>Epitrix parvula</i> Fab. - - - - -	3	119, 124
	4	204, 212
	5	297
	6	332
	7	467
	8	501, 548, 579
	10	633
<i>Epochra canadensis</i> Loew - - - - -	4	194
	5	279
<i>Erannis tiliaria</i> Harr. - - - - -	5	271
<i>Eretmocerus serius</i> Silv. - - - - -	6	362
<i>Erinnys ello</i> L. - - - - -	9	646
<i>Eriocampoides limacina</i> Retz. - - - - -	5	276
	7	447
<i>Eriophyes essigi</i> Hassan - - - - -	8	530
	9	608
<i>Eriophyes eucricotes</i> Nal. - - - - -	8	559
<i>Eriophyes fraxiniflora</i> Felt - - - - -	5	300
<i>Eriophyes gossypii</i> Bks. - - - - -	1	37
	2	78
	5	319
	6	412
	8	578

Eriophyes gracilis Mal. - - - - -	2	58
Eriophyes populi Mal. - - - - -	8	556
Eriophyes pyri Fgst. - - - - -	6	357
	7	447
	9	607
Eriophyes spp. - - - - -	5	300
	7	471
Eriophyes ulmi Garm. - - - - -	5	302
Eriophyes vitis Landois - - - - -	2	58
Eriosoma lanigerum Hausm. - - - - -	3	105
	4	217
	5	267
	6	350
	7	438
	3	521, 553
	9	601-602, 640
	10	662
Erthesina fullo Thunb. - - - - -	3	140
Erythroneura comes Say - - - - -	1	15-17
	3	86, 112
	4	156, 193
	5	278
	3	324, 359, 409
	7	420, 449-450
	8	500, 530-531
	9	608
Erythroneura harti Gill. - - - - -	2	50
Erythroneura obliqua Say - - - - -	2	50
	3	106
Erythroneura plena Beamer - - - - -	9	607
Erythroneura sp. - - - - -	3	608
Estigmene acraea Drury - - - - -	6	413, 414
	8	546, 560
Etiella zinckenella Treit. - - - - -	1	36
	5	317
	7	495
	8	575
	9	643
Eucosma n. sp. - - - - -	5	307
Eudamus proteus L. See		
Goniurus proteus L.		
Eutheola iugiceps Lec. - - - - -	1	12-13
	3	98
	4	174, 177
	5	264-265, 292
	6	348
	7	467
	8	520
	9	598
Eulecanium corni Bouche See		
Lecanium corni Bouche		

<i>Eulecanium nigrofasciatum</i> Perg. See		
<i>Lecanium nigrofasciatum</i> Perg.		
<i>Elia pinatubana</i> Kearf. - - - - -	3	627
<i>Eumerus</i> spp. - - - - -	2	70
<i>Eumerus strigatus</i> Fallen See		
<i>E. tuberculatus</i> Rond.		
<i>Eumerus tuberculatus</i> Rond. - - - - -	8	571
<i>Eupelminis saltator</i> Lind. - - - - -	4	171
<i>Euphoria basalis</i> Gory & Perch. - - - - -	6	415
<i>Euphoria inda</i> L. - - - - -	8	559
<i>Euptoieta claudia</i> Cram. - - - - -	5	286
	6	323, 343
	10	666
<i>Eurydema pulchrum</i> Westw. - - - - -	3	141
<i>Eurymus eurytheme</i> Bdv. - - - - -	3	98
	4	176
	6	344
	7	433
<i>Eurytoma parva</i> Phillips - - - - -	4	171
	5	259
	6	336
<i>Euscepes batatae</i> Waterh. - - - - -	5	317
	8	576
<i>Euschausia argentata</i> Pack. - - - - -	2	67
<i>Euschistus crenator</i> Fab. - - - - -	10	683
<i>Euschistus euschistoides</i> Voll. - - - - -	5	282
<i>Euschistus servus</i> Say - - - - -	9	612
<i>Eutettix tenellus</i> Baker - - - - -	2	44, 65-66
	3	124
	4	212
	5	296
	6	381
	7	464
	8	545
	9	620
<i>Euxesta annonae</i> Fab. - - - - -	9	646
<i>Euxoa messoria</i> Harr. - - - - -	5	246
<i>Euxoa ochrogaster</i> Guen. - - - - -	3	87-88
	4	158
	5	249
<i>Euxoa</i> sp. - - - - -	3	90, 92
	10	653
<i>Evergestis rimosalis</i> Guen. - - - - -	8	547
	9	616
<i>Exophthalmodes roseipes</i> Chev. - - - - -	10	684
<i>Eysarcoris guttiger</i> Thunb. - - - - -	3	141
<i>Feltia annexa</i> Treit. - - - - -	10	687
<i>Feltia duceus</i> Walk. - - - - -	4	163
<i>Feltia gladiaria</i> Morr. - - - - -	3	90
	4	162
	5	247
	10	653



<i>Feltia malefida</i> Guen. - - - - -	4	164
<i>Feltia</i> sp. - - - - -	3	92
	4	163
<i>Feniseca tarquinius</i> Fab. - - - - -	8	551
<i>Fenusa pumila</i> Klug - - - - -	6	326
	7	471-472
	8	551
<i>Ferdinandea aenicolor</i> Shannon - - - - -	8	557
<i>Forficula auricularia</i> L. - - - - -	1	9, 31
	2	73
	4	230
	6	404
	7	487
	8	502
<i>Formica fusca</i> L. - - - - -	4	230
<i>Formica rufa</i> L. - - - - -	5	314
<i>Formica rufa obscuripes</i> Forel - - - - -	4	230
<i>Formicidae</i> - - - - -	3	132
	4	230
	8	567-568
<i>Frankliniella achaeta</i> Hood - - - - -	1	39
<i>Frankliniella</i> ( <i>Euthrips</i> ) <i>insularis</i> Frank. -	1	38, 39
	10	634
<i>Frankliniella fusca</i> Hinds - - - - -	5	297
	6	382
<i>Frankliniella helianthi</i> Moulton - - - - -	6	407-408
<i>Frankliniella</i> n. sp. - - - - -	1	39
<i>Frankliniella occidentalis</i> Perg. - - - - -	1	39
	6	344
<i>Frankliniella stylosa</i> Hood - - - - -	1	39
<i>Frankliniella tritici bispinosus</i> Morg. - - -	1	19
	4	225
<i>Frankliniella tritici</i> Fitch - - - - -	2	59
	5	275
<i>Fulgora candelaria</i> L. - - - - -	3	151
<i>Fundella cistipennis</i> Dyar - - - - -	1	36
	4	236
<i>Galerita ruficollis</i> Dej. - - - - -	10	686
<i>Galerucella xanthomelaena</i> Schr. - - - - -	2	67
	3	125
	4	216
	5	243, 302-303
	6	324, 387
	7	421, 473-474
	8	552-553
	9	624
	10	675-676
<i>Gargaphia solani</i> Heid. - - - - -	5	296
	6	330
	7	457

<i>Gastrophilus haemorrhoidalis</i> L. - - - - -	7	486
<i>Gastrophilus intestinalis</i> DeG. - - - - -	1	29
	9	634
<i>Gastrophilus nasalis</i> DeG. - - - - -	1	29
<i>Gastrophilus</i> spp. - - - - -	5	313
	6	403
<i>Gelechia desiliens</i> Meyrick - - - - -	6	395
<i>Geocoris bullatus</i> Say - - - - -	8	518
<i>Geoderces melanothrix</i> Kby. - - - - -	4	192
	7	448
<i>Geometridae</i> - - - - -	4	153, 214
	5	243, 271, 293
	7	437
<i>Geotomus pygmaeus</i> Dall. - - - - -	3	139
<i>Geshna cannalis</i> Quaint. - - - - -	9	631
<i>Gillettea cooleyi</i> Gill. - - - - -	8	553
<i>Gliricola distincta</i> Ewing - - - - -	9	647
<i>Glycobius speciosus</i> Say - - - - -	7	476
<i>Gnorimoschema glochinella</i> Zell. - - - - -	2	65
	6	330
<i>Gnorimoschema lycopersicella</i> Busck - - - - -	2	79
	10	664
<i>Gnorimoschema operculella</i> Zell. - - - - -	3	135
	4	157, 204
	5	243, 297
	6	369, 414
	7	420, 466
	8	548
	10	664, 685
<i>Goniagnathus punctifer</i> Walk. - - - - -	3	150
<i>Goniurus proteus</i> L. - - - - -	1	35
	7	434, 493
	8	520, 575
	9	615
<i>Gossyparia spuria</i> Mod. - - - - -	4	217
	5	303
	6	323
	7	474
	8	553
<i>Gossyparia ulmi</i> L. See		
<i>G. spuria</i> Mod.		
<i>Gracilaria negundella</i> Chamb. - - - - -	6	385
<i>Grapholitha molesta</i> Busck - - - - -	1	16
	2	44, 54-55
	3	86, 89, 103-109
	4	156, 187-188
	5	242, 272-273
	6	356
	7	419, 442-443
	8	500, 525-527
	9	605
	10	660

<i>Graptostethus servus</i> Fab. - - - - -	3	148
<i>Gretchena bolliana</i> Sling. - - - - -	4	196
	5	281
<i>Gryllotalpa cultriger</i> Uhler - - - - -	6	415
<i>Gryllotalpa hexadactyla</i> Perty - - - - -	1	21
	2	61
	3	120
	7	454
	8	536
<i>Gryllotalpa</i> spp. - - - - -	8	500, 536
<i>Gryllus assimilis</i> Fab. - - - - -	6	329-330
	7	487
<i>Gryllus domesticus</i> L. - - - - -	1	31
	7	487
<i>Gynaikothrips uzeli</i> Zimm. - - - - -	4	237
	9	647
	10	684
<i>Haematobia irritans</i> L. - - - - -	5	313
	8	565
	9	634, 645
<i>Haematopinus eurysternus</i> Nitz. - - - - -	3	130
	7	485
<i>Haematopinus suis</i> L. - - - - -	9	647
<i>Halictus versatus</i> Robertson - - - - -	8	518
<i>Halisidota argentata</i> Pack. See <i>Euschausia argentata</i> Pack.		
<i>Halisidota carvae</i> Harr. - - - - -	8	554, 573
<i>Haltica bimarginata</i> Say - - - - -	8	560
<i>Haltica chalybea</i> Ill. - - - - -	3	112-113
	4	193
<i>Haltica litigata</i> Fall. - - - - -	6	393
	8	547
<i>Haltica ulmi</i> Woods - - - - -	4	217
	5	302
<i>Halticinae</i> - - - - -	3	88, 90
	4	157, 158, 173, 202
	5	235
<i>Halticus bracteatus</i> Say - - - - -	2	79
<i>Halticus citri</i> Ashm. - - - - -	4	212
	5	295
<i>Halyabbea unicolor</i> Dist. - - - - -	3	140
<i>Halyomorpha picus</i> Fab. - - - - -	3	140
<i>Hamadryas antiopa</i> L. - - - - -	5	302
	6	386, 399
	8	506
<i>Hamamelistes spinosus</i> Shim. - - - - -	5	300
	7	472
<i>Hammoderus spinipennis</i> Thoms. - - - - -	10	686
<i>Haploptilia caryaefoliella</i> Clem. See <i>Coleophora caryaefoliella</i> Clem.		



<i>Harmolita grandis</i> Riley - - - - -	6	336
<i>Harmolita tritici</i> Fitch - - - - -	4	171
	5	259
	6	336
	8	499, 511
	9	592
<i>Harmologa fumiferana</i> Clem. - - - - -	5	308
	6	325-326, 394
	8	501, 558
	10	674-675
<i>Harrisina americana</i> Guer. - - - - -	7	449
<i>Harrisina brillians</i> B. & McD. - - - - -	6	359
<i>Heilipus lauri</i> Boh. - - - - -	9	640
<i>Heliothis obsoleta</i> Fab. - - - - -	1	8, 12
	2	43, 48, 76, 77, 79
	3	96
	4	155, 172, 236
	5	242, 261
	6	323, 339-341, 412
	7	419, 429-430
	8	512-513
	9	583, 592, 594, 620, 630
		640, 644
	10	656, 681
<i>Heliothis virescens</i> Fab. - - - - -	1	36
	4	212
	8	548
	9	641
	10	684
<i>Heliothrips fasciatus</i> Perg. - - - - -	6	371
	7	466
	8	541
<i>Heliothrips haemorrhoidalis</i> Bouche - - - - -	3	129
<i>Heliothrips rubrocinctus</i> Giard - - - - -	8	576, 578
<i>Hellula undalis</i> Fab. - - - - -	3	87, 120
	8	542-543
	9	584, 616
<i>Helochara communis</i> Fitch - - - - -	7	437
<i>Hemerocampa leucostigma</i> S. & A. - - - - -	3	89
	5	299
<i>Hemerocampa pseudotsugata</i> McD. - - - - -	3	89
<i>Hemerocampa</i> sp. - - - - -	6	416
<i>Hemerophila pariana</i> Clerck - - - - -	5	270
	7	440
	8	522
<i>Hemichionaspis aspidistrae</i> Sign. - - - - -	1	28
	3	130
	4	225
	7	482
	9	631
<i>Hemichionaspis minor</i> Mask. - - - - -	10	681

Hemichionaspis minor strachani Colley - - -	1	78
Hemimene albolineana Kearf. - - - - -	4	221
	5	308
Hesperotettix spp. - - - - -	4	165
Heterocampa guttivitta Walk. - - - - -	4	217-218
	6	383
	7	421, 469
	10	672
Heteroderes laurentii Guer. - - - - -	3	92
	4	167
	5	241, 256
	7	427
	8	506
	10	654
Heterotermes aureus Snyder - - - - -	1	30
Hippelates flavipes Loew - - - - -	5	313
	6	401
	10	678
Hippelates pusio Mall. - - - - -	5	313
	6	401
	7	484
	8	562
	9	633
	10	678
Hippelates spp. - - - - -	6	325
	7	484
	8	501, 562-563
	9	633
Hippiscus corallipes Hald. - - - - -	4	165
Hippodamia ambigua Lec. - - - - -	3	23
Hippodamia convergens Guer. - - - - -	3	97
Hippodamia spuria Lec. - - - - -	3	98
Homaledra sabalella Champ. - - - - -	9	646
Homoeocerus (Anacanthocoris) stricornis Scott	3	146
Homoeocerus (Tagus) walkeri Kby. - - - - -	3	146
Homophoeta aequinoctialis Fab. - - - - -	8	578
Hoplia sackeni Lec. - - - - -	3	100
Hoplia trivialis Harold - - - - -	3	99-100
Horistonotus uhleri Horn - - - - -	3	92
	4	166
	5	255
	6	338
	10	653
Howardia biclavis Const. - - - - -	6	492
Huechys sanguinea DeG. - - - - -	3	160
Huechys sanguinea var. philaenata Fab. - - -	3	160
Hyaliodes n. sp. - - - - -	8	575
Hygia opacus Uhler - - - - -	3	146
Hylastinus obscurus Marsham - - - - -	4	176
	7	462

<i>Hylemyia antiqua</i> Meig. - - - - -	2	55
	4	211
	6	379
<i>Hylemyia brassicae</i> Bouche - - - - -	1	23
	4	205-206
	5	243, 291
	6	326, 373
	10	636
<i>Hylemyia cilicrura</i> Rond. - - - - -	1	21
	2	60
	3	87, 119-120
	4	157, 202-203
	5	243, 285-286
	10	638
<i>Hylemyia rubivora</i> Coq. - - - - -	3	112
<i>Hylemyia</i> sp. - - - - -	1	22
<i>Hylobius pales</i> Boh. - - - - -	1	28
	4	220
	7	477
<i>Hymenia fascialis</i> Cram. - - - - -	7	494
	8	577
	9	644
<i>Hymenia perspectalis</i> Hbn. - - - - -	9	619
<i>Hypera nigrirostris</i> Fab. - - - - -	4	176
	7	422
<i>Hypera postica</i> Gyll. - - - - -	3	96
	4	156, 176
	5	263
	6	343-344
	7	432
	8	499, 516
<i>Hypera punctata</i> Fab. - - - - -	3	85, 96-97
	4	175-176
	5	263
<i>Hypermallus villosus</i> Fab. - - - - -	4	197
	6	391
	8	555
<i>Hyperodes porcellus</i> Say - - - - -	6	346-347
<i>Hyphantria cunea</i> Drury - - - - -	5	282
	6	360
	7	421, 422, 451, 470
	8	501, 550
	9	609
	10	673
<i>Hyphantria textor</i> Harr. - - - - -	7	470
<i>Hypoderma bovis</i> DeG. - - - - -	4	159
<i>Hypoderma lineatum</i> De Vill. - - - - -	4	159
<i>Hypoderma</i> spp. - - - - -	2	71
	4	228
<i>Hypsopygia costalis</i> Fab. - - - - -	2	48
<i>Hysteroneura setariae</i> Thos. - - - - -	2	56
	3	86, 111-112



<i>Icerya montserratensis</i> R. & H. - - - - -	1	38
	4	237
<i>Icerya purchasi</i> Mask. - - - - -	1	19
	2	44, 59, 68, 81
	3	128
	4	198
	5	282-283
	6	363, 398
	7	452
	8	535, 559
	10	684
<i>Ichthyura inclusa</i> Hbn. - - - - -	8	557
<i>Idiarthron subquadratum</i> S. Z. & P. - - - -	10	686
<i>Illinoia pisi</i> Kalt. - - - - -	1	24
	2	43, 48, 79
	3	85, 97-98
	4	174-175
	5	243, 290
	6	345, 372, 415
	7	422
	8	516
	10	666
<i>Illinoia solanifolii</i> Ashm. - - - - -	2	79
	5	243, 283-289
	6	368
<i>Ips calligraphus</i> Germ. - - - - -	9	627
<i>Ips cribricollis</i> Eichh. - - - - -	4	234
<i>Ips grandicollis</i> Eichh. - - - - -	6	393
<i>Ips</i> spp. - - - - -	3	126
	4	220
<i>Iridomyrmex humilis</i> Mayr - - - - -	1	30
	2	73
	6	404
	7	488
	8	567
	9	635
<i>Ischnaspis longirostris</i> Sign. - - - - -	9	646
<i>Ischnorhynchus championi</i> Dist. - - - - -	9	646
<i>Isoptera</i> - - - - -	1	30
	10	679
<i>Jadera haematoloma</i> H. S. - - - - -	2	68
<i>Jalysus spinosus</i> Say - - - - -	6	369
	9	598
<i>Janus integer</i> Nort. - - - - -	5	279
<i>Julus</i> sp. - - - - -	5	292
<i>Junonia coenia</i> Hbn. - - - - -	9	632
<i>Kaliofenusa ulmi</i> Sund. - - - - -	5	302
<i>Kermes kingii</i> Ckll. - - - - -	3	126
<i>Kermes pubescens</i> Bogue - - - - -	5	306
<i>Lachnopus curvipes</i> Fab. - - - - -	7	492
<i>Lachnopus hispidus</i> Gyll. - - - - -	4	258

Lachnus sp. - - - - -	8	573
Lactica viridipennis Jacoby - - - - -	6	414
Lagoa crispata Pack. - - - - -	8	555
Laphygma exigua Hbn. - - - - -	6	337
	9	617
Laphygma frugiperda S. & A. - - - - -	3	137
	6	323, 333, 410
	8	505
	9	584, 596-597, 630, 640
	10	656-657, 687
Laphygma sp. - - - - -	9	640
Lasiochilus divisus Champion - - - - -	4	235
	6	409
Lasioderma serricorne Fab. - - - - -	1	32
	4	231
	9	636
Lasius interjectus Mayr - - - - -	3	132
	9	635
Laspeyresia caryana Fitch - - - - -	1	18
	2	57
	3	113
	4	196
	5	242, 281
	6	331
	7	450
	8	532
Laspeyresia molesta Busck See		
Grapholitha molesta Busck		
Laspeyresia prunivora Walsh - - - - -	9	601
Laspeyresia toreuta Grote See		
Carpocapsa toreuta Grote		
Lecanium capreae L. - - - - -	8	530
Lecanium corni Bouche - - - - -	3	114
	5	312
	6	335
	7	474
	9	621
Lecanium coryli L. - - - - -	8	530
Lecanium nigrofasciatum Perg. - - - - -	2	56
Lecanium numismaticum Pettit & McDaniel - -	1	26
Lecanium sp. - - - - -	1	13
Lema trilineata Oliv. - - - - -	8	559
Lepidoptera - - - - -	8	579
Lepidosaphes beckii Newm. - - - - -	1	19, 34
	2	59
	3	115
	4	198
	5	282
	6	362
	7	452
	8	534-535
	9	610

Lepidosaphes camelliae Bdv. - - - - -	1	27
Lepidosaphes carinatus Ckll. - - - - -	1	38
Lepidosaphes gloverii Pack. - - - - -	7	452
	9	646
Lepidosaphes ulmi L. - - - - -	2	58-59
	4	135
	6	384
	7	481
	8	524
Lepisma saccharina L. - - - - -	2	73
	3	133
	8	568-569
Lepisma sp. - - - - -	9	636
Leptinotarsa decemlineata Say - - - - -	1	21
	2	44, 62
	3	87, 88, 118
	4	203-204
	5	243, 244, 286-288
	6	324, 325, 366-367
	7	421, 455
	8	537-538
	10	664
Leptinotarsa multitaeniata Say - - - - -	6	414
Leptocoris abdominalis Fab. - - - - -	3	148
Leptocoris trivittatus Say - - - - -	1	31
	2	70-71
	3	132
	4	231
	6	385
	8	551-552
	9	585, 622-623
	10	676
Leptocorisa acuta Thunb. - - - - -	3	147
Leptocorisa sp. - - - - -	3	147
Leptocorisa varicornis Fab. - - - - -	3	147
Leptoglossus gonagra Fab. - - - - -	9	610-611
	10	634
Leptoglossus phyllopus L. - - - - -	8	535, 540
	9	611
Leucoptera coffeella Staint. - - - - -	1	34-35
	9	642
	10	636
Ligyris gibbosus DeG. - - - - -	3	98
	6	342
Ligyris tumulosus Burm. - - - - -	6	409
	7	492
	8	577-578
	10	634
Limax maximus L. - - - - -	2	631
Lina interrupta Fab. - - - - -	3	128
Lina scripta Fab. - - - - -	6	394



<i>Linopodes antennaepes</i> Bks. - - - - -	4	213
<i>Liponyssus bacoti</i> Hirst - - - - -	6	402
<i>Lissorhoptrus simplex</i> Say - - - - -	5	265
	6	349
<i>Listroderes obliquus</i> Gyll. - - - - -	1	8, 20
	2	44, 60
	3	86, 116
	4	200
	6	356
	9	612
	10	664-665
<i>Locustidae</i> - - - - -	8	578
<i>Lonchaea chalybea</i> Wied. - - - - -	9	643
<i>Longistigma caryae</i> Harr. - - - - -	3	126
	4	195
	9	627
<i>Longitarsus menthaphagus</i> Gent. - - - - -	8	543
<i>Lopidea robiniae</i> Uhler - - - - -	6	357
<i>Loxostege similalis</i> Guen. - - - - -	6	365
	7	419, 432-433
	8	516
	9	596
<i>Loxostege sticticalis</i> L. - - - - -	5	296
	6	324, 380-381
	7	420, 422, 464
	8	502, 546
<i>Luperodes varicornis</i> Lec. - - - - -	6	342, 349
<i>Lycophotia margaritosa</i> Haw. - - - - -	3	91
	4	163-164
<i>Lycophotia margaritosa saucia</i> Hbn. - - - - -	3	90
	5	247-248
	6	323, 330-331
	9	641
	10	652
<i>Lygaeis hospes</i> F. - - - - -	3	148
<i>Lygaeonematus erichsoni</i> Htg. - - - - -	6	388-389
	7	475
<i>Lygidea mendax</i> Reut. - - - - -	4	183-184
	5	271
	9	603
<i>Lygus elisus</i> Van D. - - - - -	2	79
<i>Lygus pratensis</i> L. - - - - -	1	25
	2	61
	3	99
	4	184
	5	276, 309
	6	368-369
	7	480
	9	607
<i>Lytta muttalli</i> Say - - - - -	6	364
	7	421, 454
<i>Lytta stygica</i> Lec. - - - - -	8	537

Macrobasis diversicornis Haas - - - - -	10	636
Macrobasis immaculata Say - - - - -	6	564
Macrobasis longicollis Lec. - - - - -	8	537
Macrobasis segmentata Say - - - - -	6	564
Macrobasis unicolor Kby. - - - - -	6	342, 564, 582, 414
	8	539
Macrocentrus delicatus Cress. - - - - -	6	356
	8	526
Macrocentrus sp. - - - - -	7	442
Macroductylus sp. - - - - -	6	414
	9	640
Macroductylus subspinosus Fab. - - - - -	5	273
	6	322
Macroductylus uniformis Horn - - - - -	7	442
Macronoctua onusta Grote - - - - -	6	322
	7	423
Macropes sp. - - - - -	3	148
Macrosiphoniella sanborni Gill. - - - - -	2	39
	3	122
Macrosiphum granarium Kby. - - - - -	5	243
	3	337
	10	356
Macrosiphum illinoisensis Shim. See		
Aphis illinoisensis Shim.		
Macrosiphum luteum Bucht. - - - - -	1	39
	2	20
Macrosiphum rosae L. - - - - -	2	70
Macrosiphum solanifolii Ashm. See		
Illinoia solanifolii Ashm.		
Magdalis lecontei Horn - - - - -	6	322
Magdalis (Tibicina) septendecim L. - - - - -	5	247, 248
	7	442
	10	372-371
Malacosoma americana Fab. - - - - -	2	43, 41
	3	86, 101-102
	4	172-150
	10	372
Malacosoma californica Pack. - - - - -	2	44, 63
	10	372
Malacosoma disstria Hon. - - - - -	1	15
	3	125
	4	153, 214-215
	5	242
	10	372
Malacosoma pluvialis Dyar - - - - -	1	15
	10	372
Malacosoma spp. - - - - -	1	15
	4	172
Mamestra picta Harr. - - - - -	5	264
	3	316

<i>Murica testulalis</i> Geyer - - - - -	1	35
	2	76
	3	136
	5	317
	8	575
<i>Megalopyge opercularis</i> S. & A. - - - - -	8	557
<i>Megalura peleus</i> Sulz. - - - - -	1	38
<i>Megarhinus septentrionalis</i> D. & K. - - - - -	3	562
<i>Megarhamphus hastatus</i> Fab. - - - - -	3	145
<i>Megaxyela major</i> Cross. - - - - -	4	197
<i>Megymenum</i> ( <i>Pseudanadus</i> ) <i>brevicornis</i> Fab. ♀ -	3	144
<i>Melanocallis caryaefoliae</i> Davis - - - - -	4	195
<i>Melanophila fulvoguttata</i> Harr. - - - - -	4	217
<i>Melanoplus atlanis</i> Riley See		
<i>Melanoplus mexicanus</i> Sauss.		
<i>Melanoplus bivittatus</i> Say - - - - -	2	45
	4	165
	5	253, 254
	6	327, 328, 329
	7	424, 425, 426
	9	586-587
	10	652
<i>Melanoplus differentialis</i> Thos. - - - - -	2	45
	5	254
	7	425, 426
	8	503, 504
	9	586, 587
	10	652
<i>Melanoplus femur-rubrum</i> DeG. - - - - -	3	90
	5	252, 253, 254
	6	327, 328
	7	424, 425, 426
	8	503, 504, 505
	9	586, 587
	10	652
<i>Melanoplus flavidus</i> Scudd. - - - - -	5	254
<i>Melanoplus mericanus</i> Sauss. - - - - -	4	165
	5	254
	6	327, 329
	7	424, 425, 426
	9	586-587
	10	652
<i>Melanoplus packardii</i> Scudd. - - - - -	7	426
<i>Melanoplus</i> spp. - - - - -	1	10
	2	45
	4	165
	5	254
	8	503
	9	536



Melanotus communis Gyll. - - - - -	5	255
	6	335
Melanotus cribulosus Lec. - - - - -	4	167
Melanotus pilosus Blatch. - - - - -	4	167
	6	335
Melanotus spp. - - - - -	4	167
	5	255
	10	653
Melipotis nigrescens G. & R. - - - - -	6	330
Melissopus latiforceatus Wlsm. - - - - -	4	199
Melittia satyriniformis Hon. - - - - -	6	377
	7	430
	8	545
	9	341
Meloidae - - - - -	5	232
	6	324, 361
	7	420, 454, 481
	8	500, 536-537
Melophagus ovinus L. - - - - -	4	229
Menida formosa Westw. - - - - -	3	142
Menida histrio Fab. - - - - -	3	142-147
Menopon pallidum Mitz. - - - - -	9	647
Merodon equestris Fab. - - - - -	2	70
	9	653
Meromyza americana Fitch - - - - -	6	336
	8	511
Meromyza nigriventris Macq. - - - - -	4	171
Mesoleius tenthredinis Morley - - - - -	6	339
Mesothrips ficorum Marchal - - - - -	10	334
Metachroma antennalis Weise - - - - -	9	344
Metalestra quadrisignata Walk. - - - - -	4	213
Metamasius hemipterus L. - - - - -	4	235
Microdentorus megacephalus H. S. - - - - -	3	145
Mictus serina Dall. - - - - -	3	145
Mineola indiginella Zell. - - - - -	5	270
Mineola scitulella Hulst - - - - -	2	56
Mineola vaccinii Riley - - - - -	5	230
Minthea rugicollis Walk. - - - - -	10	632
Miridae - - - - -	5	273
	7	420
	9	645
(Mocis) Remigia repanda Fab. - - - - -	7	493
	3	578
	10	637
Mollusca - - - - -	2	61
	3	123
	2	645
Monarthropalpus buxi Labou. - - - - -	3	352
Monecphora bicincta Say - - - - -	5	339
Monellia costalis Fab. - - - - -	4	145
	6	362
	7	451
	8	532

Monellia nigropunctata Gran. - - - - -	4	195
Monocrepidius auritus Hbst. - - - - -	4	167
	10	653
Monocrepidius vespertinus Fab. - - - - -	4	166
	10	653
Monodes deltoides Mosch. - - - - -	7	495
Monomorium floricola Jerdon - - - - -	8	567
Monomorium pharaonis L. - - - - -	7	488
	8	567
Mononychus vulpeculus Fab. - - - - -	6	398
Monoptilota pergratialis Hulst - - - - -	6	371
	8	500, 540
Mormidea ypsilon L. - - - - -	9	646
Muda virguncula Walk. - - - - -	3	150
Murgantia histrionica Hahn - - - - -	1	22
	2	63
	3	87, 122
	4	157, 206-207
	6	373, 400, 415
	7	461
	8	500, 542
	9	616, 641
	10	667
Musca domestica L. - - - - -	1	29
Myeloborus ramiperda Sw. - - - - -	6	393
Myiophasia aenea Wied. - - - - -	8	519
Mylabris brachialis Fahraeus See		
Bruchus brachialis Fahraeus		
Mylabris chinensis L. See		
Callosobruchus chinensis L.		
Mylabris obtectus Say See		
Acanthoscelides obtectus Say		
Mylabris pisorum L. See		
Bruchus pisorum L.		
Myochrous denticollis Lec. - - - - -	4	173
Myrmelachista ambigua Forel var. ravulorum		
Wheeler	10	684
Myzaphis spp. - - - - -	1	39
	2	80
Myzocallis fumipennellus Fitch - - - - -	3	114
	4	194
	6	362
	7	451
	8	531-532
	9	609
Myzocallis kahawaluokalani Kirk. - - - - -	4	224
	7	482
	8	560
	9	631
Myzus cerasi Fab. - - - - -	3	111
	4	192
	5	277

Myzus persicae Sulz. - - - - -	1	22, 39
	2	61, 77, 80
	3	87, 110, 120, 136
Myzus ribis L. - - - - -	4	134
	5	279
	6	360
Myzus sp. - - - - -	2	66
Nacerda melanura L. - - - - -	6	406
Nacoleia indicata Fab. - - - - -	7	433
	8	575
	9	643
Napomyza chrysanthemi Kowarz - - - - -	5	312
	9	631
Neleucania albilinea Hbn. - - - - -	8	512
Nematus erichsoni Htg. See		
Lygaeonematus erichsoni Htg.		
Neoclytus acuminatus Fab. - - - - -	3	163
Neoclytus caprea Say - - - - -	5	306
Neodiprion excitans Roh. - - - - -	7	478
Neodiprion lecontei Fitch - - - - -	1	26
	7	478
	8	556
Neodiprion pinetum Nort. - - - - -	9	628
Neodiprion sp. - - - - -	6	393
Neorondania chalybea Wied. - - - - -	10	634
Neotoxoptera sp. - - - - -	1	39
	2	80
Nephelodes emmedonia Cram. - - - - -	4	163
	10	653
Nephotettix bipunctatus Fab. - - - - -	3	150
Nepticula gossypii Fbs. & Leon. - - - - -	1	37
	2	78
	4	273
	6	412
Nepticula sericopeza Zell. - - - - -	5	391
Neuria procincta Grote - - - - -	3	32
Neuroterus saltatorius Hy. Edw. - - - - -	5	306
	6	331
Nezara marginata Beauv. - - - - -	7	427
Nezara viridula L. - - - - -	2	77
	3	142
	6	378
	9	612
	10	634
Noctua fennica Tausch. - - - - -	7	426
Noctuidae - - - - -	1	8, 10-11, 34, 35, 36
	2	46, 79
	3	85, 88, 90-92
	4	155, 158, 161-164, 274
	5	241, 246-249
	6	350-332
	7	426-427, 438
	8	505
	10	652-653



Nodonota clypealis Horn - - - - -	7	482
Nodonota cretifera Lefevre - - - - -	10	688
Nodonota puncticollis Say - - - - -	6	374, 398
Notobitus sp. - - - - -	3	146
Nygmia phaeorrhoea Don. - - - - -	1	26
	2	66
	3	89, 124
	4	232-233
	7	469, 470, 490
	10	671
Nysius ericae Schill. - - - - -	4	230
	5	295
	6	324, 365-366
	7	420, 453, 454-455
	8	500, 537
	9	613
Nysius ericae minutus Uhler - - - - -	8	537
Nysius sp. - - - - -	3	148
	8	573
Oberea bimaculata Oliv. - - - - -	6	358
	7	443
	8	502
Oberea myops Hald. - - - - -	9	629
Ochrosidea immaculata Oliv. - - - - -	6	346
Ochrosidea villosa Burm. - - - - -	9	583, 589-590
	10	677
Oecanthus niveus DeG. - - - - -	7	446
	9	608
Oecanthus sp. - - - - -	2	57
Oedionychis sexmaculata Ill. - - - - -	6	384
Omiodes blackburni Butl. - - - - -	10	681
Oncideres cingulatus Say - - - - -	1	13
	2	57
	8	533
	9	609
Oncideres poecila Bates - - - - -	10	686
Oncideres texanus Horn - - - - -	8	535
Oncometopia undata Fab. - - - - -	10	687
Oncopeltus aulicus Fab. - - - - -	6	412
Oncopeltus fasciatus Dall. - - - - -	9	629
Oniscidae - - - - -	1	21
	2	62
Orchestes pallicornis Say - - - - -	3	106
	4	185
	6	354
Ormenis pruinososa Say - - - - -	5	283, 311
	7	480-481
Ormenis sp. - - - - -	9	647
Ornithodoros turicata Duges - - - - -	6	402
Orthaea nietneri Dohrn - - - - -	3	148
Orthaea punctulata Motsch. - - - - -	3	148

<i>Orthaea vineta</i> Say - - - - -	2	64
	3	148
<i>Orthaea vitalisi</i> Dist. - - - - -	3	148
<i>Orthezia insignis</i> Douglas - - - - -	6	111
<i>Oryzaephilus mercator</i> Fauv. - - - - -	1	32
<i>Oryzaephilus surinamensis</i> L. - - - - -	2	636
<i>Oxya chinensis</i> Thunb. - - - - -	10	680
<i>Pachylis hector</i> Stal - - - - -	10	636
<i>Pachymerus curvipes</i> Latr. - - - - -	10	638
<i>Pachyzancla periusalis</i> Walk. - - - - -	10	635
<i>Palaecrita vernata</i> Peck - - - - -	1	15
	3	125
	4	214
	5	228
	6	357
	8	527
<i>Pantomorus femoratus</i> Sharp and Champion - -	10	637
<i>Pantomorus fulleri</i> Horn See		
<i>Asynonychus godmani</i> Crotch		
<i>Papaipema nebris nitela</i> Guen. - - - - -	7	431
	8	514
<i>Papilio ajax marcellus</i> Cram. - - - - -	2	32
<i>Papilio anchisiades</i> Esper. - - - - -	1	38, 39
<i>Papilio androgeus</i> Cram. - - - - -	7	492
<i>Papilio cresphontes</i> Cram. - - - - -	4	199
<i>Papilio polyxenes</i> Fab. - - - - -	8	547
<i>Parabolocratus</i> spp. - - - - -	2	150
<i>Paraclemensia acerifoliella</i> Fitch - - - - -	7	476
<i>Paralechia pinifoliella</i> Chamb. - - - - -	4	219
	6	391
<i>Paralitomastix</i> n. sp. - - - - -	10	382
<i>Parandra brunnea</i> Fab. - - - - -	7	471
<i>Paratetranychus citri</i> McG. - - - - -	4	192
	5	235
	3	555
<i>Paratetranychus ilicis</i> McG. - - - - -	7	473
<i>Paratetranychus pilosus</i> C. & F. - - - - -	1	15
	2	43, 53-54
	3	167
	4	153, 136
	5	726
	10	652
<i>Paratetranychus uniunguis</i> Jacobi - - - - -	4	242
	5	308
	6	326
<i>Paratrioza cockerelli</i> Sulz. - - - - -	3	762
<i>Paria canella</i> Fab. - - - - -	4	208
	6	374
	8	547
<i>Paria canella gilvipes</i> Horn - - - - -	4	196
<i>Paria canella pumila</i> Lec. - - - - -	4	196

Parlatoria blanchardi Targ. - - - - -	2	74
	3	134
	4	232
	6	407
	7	491
Parlatoria pergandii Comst. - - - - -	1	38
	7	452
Parocanthus guatemalae Sauss. - - - - -	4	234
Pectinophora gossypiella Saund. - - - - -	1	37
	2	75, 78
	3	134, 136-137
	4	232, 238
	5	315-316, 319
	6	406, 411, 414
	7	490-491, 493, 494
	8	571-572, 574-575, 578
	9	637, 645
	10	669-670
Pegomyia hyoscyami Panz. - - - - -	5	296
Pelidnota punctata L. - - - - -	6	359
	7	449
Pemphigus populitransversus Riley - - - - -	1	25
Pentatoma ligata Say - - - - -	6	414
Pentatomidae - - - - -	9	645
Peregrinus maidis Ashm. - - - - -	8	515
	9	646
Perforadix sacchari Sein - - - - -	1	33
	4	235
Peribalus limbolarius Stal - - - - -	9	620
Peridroma sp. - - - - -	6	412
Periphyllus lyropictus Kess. - - - - -	5	305
	6	390
Perkinsiella saccharicida Kirk. - - - - -	10	680
Petrova comstockiana Fernald - - - - -	5	307
Pheidole desertorum maricopa Whl. - - - - -	6	363
Pheletes agonus Say - - - - -	4	166
	5	255
	9	588
	10	653
Pheletes canus Lec. - - - - -	3	92
Phelomerus aberrans Sharp - - - - -	10	688
Phenacoccus acericola King - - - - -	7	475-476
	8	554
	9	626
Phenacoccus gossypii Towns. & Coll. - - - - -	2	68
	9	610
Philaenus spumarius Fall. - - - - -	6	347
Phlegonthontius quinque maculata Haw. - - - - -	5	297
	9	613
Phlegethontius sexta Johan. - - - - -	4	236
	5	297
	6	369, 414
	7	457



Phlegthontius sexta Johan. var jamaicensis		
Butl. - - - - -	1	33
Phlegethontius spp. - - - - -	7	436
	8	548
	9	613
Phlyctaenia rubigalis Guen. - - - - -	2	76
	3	123
	4	211
	3	545
	9	619, 631
	10	635
Phobetron pithecium S. & A. - - - - -	8	549
Phorbia rubivora Coq. See		
Hylemyia rubivora Coq.		
Phthia picta Drury - - - - -	2	77
	4	236
Phthorimaea glochinella Zell. See		
Gnorimoschema glochinella Zell.		
Phthorimaea lycopersicella Busck See		
Gnorimoschema lycopersicella Busck		
Phthorimaea operculella Zell. See		
Gnorimoschema operculella Zell.		
Phyllocoptes fockeui Na. & Tr. - - - - -	3	500, 529
	10	663
Phyllocoptes oleivorus Ashm. - - - - -	1	34
	4	199
	6	333
	8	535
	9	611
	10	635
Phyllocoptes quadripes Shim. - - - - -	5	305
Phyllonorycter felinella Heinr. - - - - -	6	395
Phyllophaga anxia Lec. - - - - -	8	501-502
Phyllophaga bipartita Horn - - - - -	4	169
Phyllophaga citri Smyth - - - - -	3	135-136
Phyllophaga congrua Lec. - - - - -	3	93
Phyllophaga portoricensis Smyth - - - - -	3	135
	6	409
Phyllophaga praetermissa Horn - - - - -	4	169
Phyllophaga rugosa Melsh. - - - - -	5	257
Phyllophaga spp. - - - - -	1	11, 33, 34
	2	76
	3	38, 92-93
	4	158, 168-169
	5	244, 256-257, 318, 319
	8	335, 409, 413
	7	465
	8	506
	9	525, 587-588, 629
	10	640, 646, 653

Phyllophaga tristis Fab. - - - - -	4	168
Phyllophaga vandinei Smyth - - - - -	8	574
Phyllotoma nemorata Fallen - - - - -	2	44, 66
	5	301
	6	334
	7	472
	9	621-622
	10	675
Phyllotreta aeneicollis Cr. - - - - -	9	612
Phyllotreta armoraciae Koch - - - - -	4	202
Phyllotreta bipustulata Fab. - - - - -	9	612
Phyllotreta vittata Fab. - - - - -	4	204, 207
	9	612
Phyllotretata vittata discedens Horn - - - -	3	118
Phylloxera caryaecaulis Fitch - - - - -	3	126
	4	156, 195
	5	282, 303
	8	554
Phylloxera caryae-venae Fitch - - - - -	5	303
Phylloxera devastatrix Perg. - - - - -	5	282
Physokermes piceae Schr. - - - - -	5	308
Phytomyza chrysanthemi Kowarz See		
Napomyza chrysanthemi Kowarz		
Phytonomus nigrirostris Fab. See		
Hypera nigrirostris Fab.		
Phytonomus posticus Gyll. See		
Hypera postica Gyll.		
Phytophaga destructor Say - - - - -	1	11
	2	43, 46-47
	3	85, 88, 94-95
	4	155, 170
	5	241, 258
	6	336
	7	429
	8	499, 509-510
	9	583, 591-592
	10	654-655
Pieris elodia Bdv. - - - - -	10	687
Pieris monuste L. - - - - -	10	687
Pieris protodice B. & L. See		
Ascia protodice B. & L.		
Pieris rapae L. See		
Ascia rapae L.		
Piezodorus rubrofasciatus Fab. - - - - -	3	143
Pineus pinifoliae Fitch - - - - -	6	395
	8	557
Pinnaspis aspidistrae Sign. - - - - -	2	68
Pissodes approximatus Hopk. - - - - -	4	220
	7	477
Pissodes deodarae Hopk. - - - - -	1	28
	2	69
	3	128
	4	224
	9	623

Pissodes nemorensis Germ. - - - - -	1	23
	5	301
	3	624
Pissodes sp. - - - - -	8	557
Pissodes strobi Peck - - - - -	3	127
	4	210
	7	477
	3	386
	9	627
Pityogenes hopkinsi Sw. - - - - -	6	393
Plagiodera versicolora Laich. - - - - -	6	396
	7	479
	9	628
Plagiognathus caryae Knight - - - - -	4	197
Plathypera scabra Fab. - - - - -	5	263
	6	372
	7	421, 432, 434
	3	499, 515-516
Platypheura hilpa Walk. - - - - -	3	149
Platysamia cecropia L. - - - - -	6	333
	7	471, 433
Plautia fimbriata Fab. - - - - -	3	142
Plinactus sp. - - - - -	3	146
Plodia interpunctella Hbn. - - - - -	1	32
	10	688
Plutella maculipennis Curt. - - - - -	1	23
	2	62, 77
	3	88, 121
	4	205, 237
	5	291
	6	373, 380
	7	421
	8	502
Podosesia fraxini Dugger - - - - -	8	551
Podosesia syringae Harr. - - - - -	7	471
Poecilocapsus lineatus Fab. - - - - -	5	309
Poecilocoris druriei L. - - - - -	3	139
Poeciloptera sp. - - - - -	10	638
Pogonomyrmex badius Latr. - - - - -	3	563
Pogonomyrmex occidentalis Cress. - - - - -	5	314
Polia purpurissata Grote - - - - -	4	161
Polia renigera Steph. - - - - -	4	162
	5	247
	10	633
Polistes aurifer Sauss. - - - - -	5	314
Polychrosis viteana Clem. - - - - -	3	113
	4	194
	8	530
Pomphopoea aenea Say - - - - -	4	101
Pomphopoea sayi Lec. - - - - -	5	277
	6	366



<i>Pomponia fusca</i> Oliv. - - - - -	3	149
<i>Pontania pectoralis</i> Marlatt - - - - -	3	551
<i>Popillia japonica</i> Newm. - - - - -	5	257, 313
	6	397, 407
	7	419, 428
	8	499, 507-508, 570
	9	523, 529, 537
	10	573
<i>Porosagrotis orthogonia</i> Morr. - - - - -	7	37
	4	158
	5	244, 249
	6	325, 331
	7	427
	8	505
<i>Porthetria dispar</i> L. - - - - -	2	36, 75
	3	124, 134
	4	215, 232
	5	313
	6	403
	7	490
	8	550, 570
	9	637-638
	10	571
<i>Prenolepis imparis</i> Say - - - - -	1	31
<i>Prionoxystus robiniae</i> Peck - - - - -	4	215
	5	300
	6	334
	7	476
<i>Prionus fissicornis</i> Hald. - - - - -	5	509
	6	542
<i>Priophorus acericaulis</i> MacG. - - - - -	5	304-305
<i>Prociphilus erigeronensis</i> Thos. - - - - -	7	431
<i>Prociphilus imbricator</i> Fitch - - - - -	8	531
	9	621
<i>Prociphilus tessellatus</i> Fitch - - - - -	5	305
	9	625
<i>Prodenia ornithogalli</i> Guen. - - - - -	4	134
	5	243
	7	423, 423
	8	579
	10	653
<i>Prodenia</i> sp. - - - - -	9	640
<i>Prophanurus emersoni</i> Gir. - - - - -	7	436
<i>Prospaltella fuscipennis</i> Gir. - - - - -	3	114
<i>Protalebra brasiliensis</i> De Long - - - - -	6	409
	7	492
	8	574
	9	642
<i>Proteopteryx bolliana</i> Sling. See Gretchena bolliana Sling.		
<i>Protoparce quinquemaculata</i> Haw. See Phlegethontius quinquemaculata Haw.		

Protoparce sexta Johan. See		
Phlegethontius sexta Johan.		
Protoparce sexta Johan. var. jamaicensis		
Butl. See		
Phlegethontius sexta Johan. var.		
jamaicensis Butl.		
Protoparce spp. See		
Phlegethontius spp.		
Proutista moesta Westw. - - - - -	3	151
Psallus seriatus Reut. - - - - -	6	349
Psara perusialis Walk. - - - - -	1	35
Psara phaeopteralis Guen. - - - - -	6	410
	7	423
Pseudaonidia articulatus Morg. - - - - -	1	38
Pseudococcobius terryi Ful. - - - - -	10	681
Pseudococcus boninsis Kuwana - - - - -	7	467
Pseudococcus brevipes Ckll. - - - - -	1	38
	10	685
Pseudococcus bromeliae Bouche - - - - -	10	685
Pseudococcus citri Risso - - - - -	4	236
	6	363
	7	494
	10	685
Pseudococcus comstocki Kuw. - - - - -	7	472
	9	623
Pseudococcus gahani Green - - - - -	4	198-199
	7	452
	10	663
Pseudococcus nipae Mask. - - - - -	9	646
Pseudococcus sacchari Ckll. - - - - -	4	235
Pseudococcus spp. - - - - -	2	76
	8	578
	9	644, 646
Pseudococcus virgatus Ckll. - - - - -	1	38
Pseudolucanus dama Fab. - - - - -	5	263
Pseudopachymerus brasiliensis Thunb. - - - - -	10	682
Pseudoparlatoria ostreata Ckll. - - - - -	5	318
	9	643
Pseudophilippia quaintancii Ckll. - - - - -	5	307
Psila rosae Fab. - - - - -	2	65
Psilocorsis faginella Chamb. - - - - -	6	384
	7	471
Psiloptera (Lamptis) simplex Waterh. - - - - -	10	686
Psocidae - - - - -	7	475
Psocus venosus Burm. - - - - -	7	487
Psorophora champerico D. & K. - - - - -	8	562
Psorophora posticata Wied. - - - - -	8	562
Psoroptes ovis Her. - - - - -	4	229
Psorosina hammondi Riley - - - - -	9	601
Psychonoctua personalis Grote - - - - -	9	642
Psyllia mali Schmid. - - - - -	5	245

<i>Psyllia pyricola</i> Foerst. - - - - -	2	44, 56
	3	111
	4	191
	5	276
	6	357
	7	447
<i>Psyllidae</i> - - - - -	4	218
<i>Psylliodes punctulata</i> Melsh. - - - - -	2	60
	4	212
	5	297
<i>Pteronidea ribesi</i> Scop. - - - - -	4	194
	5	279
	6	360
	8	531
<i>Ptinus fur</i> L. - - - - -	6	404
<i>Ptinus villiger</i> Reit. - - - - -	4	159
<i>Pulex irritans</i> L. - - - - -	8	564
<i>Pullus</i> sp. - - - - -	10	680
<i>Pulvinaria iceryi</i> Guer. - - - - -	3	135
<i>Pulvinaria psidii</i> Mask. - - - - -	7	492
<i>Pulvinaria vitis</i> L. - - - - -	2	58
	5	306
	6	390
	7	476
	8	531
	9	626
<i>Pycnoderes incurvus</i> Dist. - - - - -	8	579
	9	644
<i>Pyrausta nubilalis</i> Hbn. - - - - -	3	88, 134
	4	233
	6	406
	7	419, 429
	8	512, 571
	9	594-595
	10	634
<i>Pyroderces rileyi</i> Wlsm. - - - - -	4	238
<i>Pyrota rugulipennis</i> Champion - - - - -	10	687
<i>Reticulitermes flavipes</i> Kollar - - - - -	3	131
<i>Reticulitermes</i> spp. - - - - -	1	30
	2	72
	3	131-132
	4	229-230
	5	314
	7	488
	8	501, 566-567
	9	634-635
	10	679
<i>Reticulitermes tibialis</i> Bks. - - - - -	3	131
	5	314
	8	567
	9	635



<i>Rhabdocnemis obscura</i> Bdv. - - - - -	10	680
<i>Rhabdopterus picipes</i> Oliv. - - - - -	5	280
	6	360
<i>Rhagoletis cingulata</i> Loew - - - - -	4	192
	5	277
	6	358
	7	447
<i>Rhagoletis fausta</i> O. S. - - - - -	4	192
	5	277
	6	358
<i>Rhagoletis pomonella</i> Walsh - - - - -	5	272
	6	354
	7	441
	8	524-525, 531
	9	604
<i>Rhina barbirostris</i> Fab. - - - - -	10	686
<i>Rhipicephalus sanguineus</i> Latr. - - - - -	7	486
<i>Rhizoglyphus hyacinthi</i> Bdv. - - - - -	9	632
<i>Rhizopertha dominica</i> Fab. - - - - -	9	645
<i>Rhodobasus 13-punctatus</i> Ill. - - - - -	8	560
<i>Rhodocura terminalis</i> Walk. - - - - -	10	687
<i>Rhopalosiphum prunifoliae</i> Fitch - - - - -	2	50
	3	103, 105
	4	158-159, 183
	5	260
	10	661
<i>Rhopalosiphum pseudobrassicae</i> Davis - - - - -	1	9, 25
	2	51, 55
	3	123
	8	545
	9	619-620
<i>Rhopalosiphum rufomaculatum</i> Wilson - - - - -	3	129
<i>Rhyacionia buoliana</i> Schiff. - - - - -	2	66
	4	158, 218-219
	5	306-307
	7	422, 477
	8	553
	10	674
<i>Rhyacionia frustrana</i> Comst. - - - - -	4	158, 219
	8	555
	10	674
<i>Rhynchites bicolor</i> Fab. - - - - -	5	311-312
	6	393
<i>Rhynchocoris humeralis</i> Thunb. - - - - -	3	143
<i>Rhynchophorus palmarum</i> L. - - - - -	9	640
	10	686
<i>Riptortus linearis</i> Fab. - - - - -	3	147
<i>Riptortus pedestris</i> F. - - - - -	3	147
<i>Riptortus</i> sp. - - - - -	3	147
<i>Rodolia cardinalis</i> Muls. - - - - -	2	59
	4	198
	6	763, 598

Romaleum rufulum Hald. - - - - -	9	626
Saissetia hemisphaerica Targ. - - - - -	1	33, 39
	4	234, 233
	10	685, 636
Saissetia nigra Nietn. - - - - -	1	37
	6	412
	9	629-630
	10	686
Saissetia oleae Bern. - - - - -	1	38
	9	610
Salurnis marginellus Guer. - - - - -	3	151
Samia cecropia L. See		
Platysamia cecropia L.		
Sanninoidea exitiosa Say See Aegeria		
exitiosa Say		
Sanninoidea rutilans Hw. Edw. See Aegeria		
rutilans Hw. Edw.		
Saperda calcarata Say - - - - -	3	127
Saperda candida Fab. - - - - -	2	53
	5	272
	9	601
Saperda tridentata Oliv. - - - - -	9	624
Scapteriscus vicinus Scudd. - - - - -	1	33
	2	61
	4	203
	5	317
Schistocerca americana Drury - - - - -	2	45
	10	637
Schistocerca paranensis Burm. - - - - -	10	637
Schistocerca spp. - - - - -	1	10
	8	579
Schizocerophaga leiby Towns. - - - - -	6	379
Schizura concinna S. & A. - - - - -	7	448
	8	502, 522
	9	607
Sciara sp. - - - - -	1	25
	4	213
Scirtothrips citri Moulton - - - - -	2	59
Scolia manilae Ashm. - - - - -	10	630
Scolothrips sermaculatus Perg. - - - - -	7	420, 428
Scolytus multistriatus Marsh. - - - - -	3	125
Scolytus quadrispinosus Say - - - - -	9	624
Scolytus rugulosus Ratz. - - - - -	3	85, 99
	4	185
	6	757
	8	529
	9	607, 624
	10	661
Scolytus ventralis Lec. - - - - -	6	388
Scotinophara lurida Burm. - - - - -	3	140
Scutigera forceps Raf. - - - - -	7	438
Scutigerella immaculata Newp. - - - - -	2	39
	8	561
	9	630

<i>Scymnus panamensis</i> Gorham - - - - -	9	646
<i>Scyphophorus acupunctatus</i> Gyll. - - - - -	9	640
<i>Scythropus elegans</i> Couper - - - - -	4	220
<i>Secodella acrobasis</i> Craw. - - - - -	9	609
<i>Selenocephalus</i> sp. - - - - -	3	150
<i>Selenothrips rubrocinctus</i> Giard - - - - -	9	611
<i>Serica iricolor</i> Say - - - - -	3	100
<i>Serica</i> sp. - - - - -	3	100
<i>Sesia pictipes</i> G. & R. See		
<i>Aesoria pictipes</i> G. & R.		
<i>Simuliidae</i> - - - - -	3	87,130-131
	4	159
	7	423
<i>Simulium</i> sp. - - - - -	4	227,228
<i>Simulium vittatum</i> Zett. - - - - -	3	87,131
<i>Sipha flava</i> Forbes - - - - -	1	33
	2	76
	4	235
	8	574
	9	642
<i>Siphonaptera</i> - - - - -	1	29
<i>Sitona hispidula</i> Fab. - - - - -	4	176
<i>Sitophilus granaria</i> L. - - - - -	9	636
<i>Sitophilus oryzae</i> L. - - - - -	1	32
	10	688
<i>Sminthurus hortensis</i> Fitch - - - - -	5	286
<i>Solenopotes capillatus</i> Enderlein - - - - -	9	647
<i>Solenopsis geminata</i> Fab. - - - - -	1	30,38
	7	453
	8	568
	9	645
<i>Solenopsis geminata</i> subsp. <i>rufa</i> Jerdon - - -	8	567
<i>Solenopsis littoralis</i> Creighton - - - - -	2	72
<i>Solenopsis molesta</i> Say - - - - -	4	230
<i>Solenopsis</i> spp. - - - - -	9	611
<i>Solenopsis xyloni</i> McCook - - - - -	1	30
	2	73
<i>Spartocera batatas</i> Fab. - - - - -	3	136
	8	576
<i>Sphenarium</i> sp. - - - - -	6	413
<i>Sphenophorus aequalis</i> Gyll. - - - - -	5	262
	6	341
<i>Sphenophorus incurrens</i> Gyll. - - - - -	9	639
<i>Sphenophorus</i> spp. - - - - -	4	173
	5	232
<i>Sphinx lineata</i> Fab. - - - - -	5	261
	6	337
	7	427
<i>Spilonota ocellana</i> Schiff. - - - - -	3	103
	4	181
	5	271
	9	600



<i>Spodoptera mauritia</i> Bdv. - - - - -	10	680
<i>Stamoderes setulosus</i> Lac. - - - - -	3	106
<i>Stamoderes uniformis</i> Csy. - - - - -	3	106
<i>Stenoma annonella</i> Sepp. - - - - -	1	38
	2	80
<i>Stephanitis pyrioides</i> Scott - - - - -	3	149
	6	397
<i>Stephanoderes coffeae</i> Hog. - - - - -	9	639
<i>Sterictiphora collaris</i> Say - - - - -	6	379
<i>Stethorus picipes</i> Csy. - - - - -	8	507
<i>Stictocephala festina</i> Say - - - - -	5	264
	8	499, 516-517
	9	596
<i>Stilpnotia salicis</i> L. - - - - -	3	89
	8	571
	10	672
<i>Stomacoccus platani</i> Ferris - - - - -	6	396
<i>Stomoxys calcitrans</i> L. - - - - -	6	403
	8	501, 564-565
	9	634
	10	678-679
<i>Strategus julianus</i> Burm. - - - - -	9	640
<i>Strategus quadrimaculatus</i> P. de B. - - - - -	1	34
	4	235
	7	492
<i>Strategus</i> sp. - - - - -	9	640
<i>Sturmia scutellata</i> R. D. - - - - -	3	124
<i>Sylepta gordialis</i> Guen. - - - - -	8	579
<i>Synanthedon acerni</i> Clem. - - - - -	2	67
	8	554
<i>Synanthedon exitiosa</i> Say See		
<i>Aegeria exitiosa</i> Say		
<i>Synanthedon pictipes</i> G. & R. See		
<i>Aegeria pictipes</i> G. & R.		
<i>Synanthedon scitula</i> Harr. - - - - -	5	282
<i>Synanthedon tipuliformis</i> L. - - - - -	6	360
<i>Syrphus wiedemanni</i> Johns. - - - - -	3	114
<i>Systema taeniata</i> Say - - - - -	5	285
Tabanidae - - - - -	6	403
<i>Tabanus atratus</i> Fab. - - - - -	6	403
<i>Tabanus costalis</i> Fab. - - - - -	4	229
<i>Tabanus pumilus</i> Macq. - - - - -	4	229
<i>Tabanus rubescens</i> Bellardi - - - - -	7	486
<i>Tabanus</i> spp. - - - - -	7	486
	8	566
<i>Tabanus turbidus</i> Wied. - - - - -	8	566
<i>Tachypterellus quadrigibbus</i> Say - - - - -	2	53
	4	185
	6	354
	7	441
	9	601

Taeniopoda aurantia Bruner - - - - -	10	687
Taeniopoda eques Burm. - - - - -	6	413
Taeniothrips atratus montanus Hal. - - - -	9	585, 632
	10	677
Taeniothrips gladioli M. & S. - - - - -	7	421, 422, 483
	8	561
	9	632
	10	677
Taeniothrips inconsequens Uzel - - - - -	4	191-192
Taniva albolineana Kearf. - - - - -	6	395
Tanymecus confertus Gyll. - - - - -	5	264
Tapinoma sessile Say - - - - -	5	314
	7	438
Targionia helianthi Parrott - - - - -	8	561
Tarsonemus pallidus Bks. - - - - -	4	223
	5	310
	6	398
	9	630
Teleonemia nigrina Champ. - - - - -	6	400
Tenebrio molitor L. - - - - -	2	73
Tenebrionidae - - - - -	8	512
Tenthredinidae - - - - -	4	208
	8	556
Tessaratomya papillosa Drury - - - - -	3	144
Tetanops aldrichi Hendel - - - - -	4	212
	6	381
Tetralopha melanogrammos Zell. - - - - -	9	627
Tetranychus bimaculatus Harvey - - - - -	8	525
Tetranychus pacificus McG. - - - - -	1	17
	7	420, 428, 450
	9	608
	10	663
Tetranychus sexmaculatus Riley - - - - -	3	86, 115
	4	157, 199
	10	662
Tetranychus sp. - - - - -	1	34
	6	413
	7	419
	8	578
Tetranychus telarius L. - - - - -	1	27
	3	86, 93-94
	4	199, 223-224
	5	244, 309
	6	354, 358, 380
	7	422, 428, 442, 448
	8	439, 502, 507
	9	590
Tettigoniella ferruginea Fab. - - - - -	3	150
Thiodia signatana Clem. - - - - -	7	475
Thrips tabaci Lind. - - - - -	1	36
	2	65, 77
	4	211
	6	379
	7	463-464
	10	625

Thyanta peritor Fab. - - - - -	10	685
Thyridopteryx echemeraeformis Haw. - - - - -	1	26
	5	299
	6	383
	7	420, 468-469
	8	549
	10	673
Thysanoptera - - - - -	4	226
	6	402
	8	561
Tibicina septendecim L. See-		
Masicicada (Tibicina) septendecim L.		
Tingididae - - - - -	8	559
Tipulidae - - - - -	4	174
Tolumnia latipes Dall. - - - - -	3	141
Tomaspis inca Guer. - - - - -	10	687
Tomostethus bardus Say - - - - -	4	215
	5	300
Tortrix cockerella Kearf. - - - - -	5	301
Tortrix ivana Fern. - - - - -	10	673
Toumeyella liriodendri Gmel. - - - - -	3	127
	4	226
Toumeyella numismaticum P. & McD. - - - - -	4	220, 221
	6	393
Toumeyella sp. - - - - -	10	686
Toxoptera aurantiae Boyer - - - - -	1	39
	2	80
	3	127
	9	646
	10	686
Toxoptera graminum Rond. - - - - -	3	83-89
	10	656
Toxotrypana curvicauda Gerst. - - - - -	2	76
	7	492
	8	576
	9	640, 643
Tremex columba L. - - - - -	9	624
Trialeurodes packardii Morr. - - - - -	6	374
Trialeurodes vaporariorum Westw. - - - - -	2	63
	4	225
Tribolium confusum Duv. - - - - -	6	404
	9	636
Tribolium ferrugineum Fab. - - - - -	1	32
Trichalophus didymus Lec. - - - - -	7	420, 465
Trichiocampus viminalis Fall. - - - - -	7	473
Trichobaris mucorea Lec. - - - - -	5	296
Trichobaris sp. - - - - -	2	79
Trichobaris trinotata Say - - - - -	5	283
Trichogramma minutum Riley - - - - -	4	177
	5	261, 265
	10	653



Trichogramma sp. - - - - -	9	646
Trigona anathaea Oliv. - - - - -	1	38
Trigona sylvestriana Vachal - - - - -	1	38
Trimerotropis vinculata Scudd. - - - - -	4	135
Trimerotropis spp. - - - - -	4	135
	5	329
Trionymus boninsis Kuwana - - - - -	10	681
Trionymus sacchari Gill. - - - - -	1	38
	10	680
Trioza diospyri Ashm. - - - - -	4	194
Trioza koebelei Kirk. - - - - -	9	640
Trinhabda brevicollis Lec. - - - - -	5	311
Trombicula irritans Riley - - - - -	1	29
	4	228
	6	402
Tropidocephala (Smara) atrata Dist. - - - - -	3	151
Tunga penetrans L. - - - - -	6	402
Tyloderma fragariae Riley - - - - -	2	64
	6	374
	7	465
Tyloderma morbillosa Lec. - - - - -	4	208
Typhlocyba pomaria McAtee - - - - -	4	184
	8	523
	9	602
Typhlocyba rosae L. - - - - -	7	440, 449
	8	523
Tyroglyphus americanus Bks. - - - - -	3	133
Tyroglyphus lintneri Osborn - - - - -	4	213
Tyroglyphus siro L. - - - - -	8	568
Umbonia crassicornis Am. & Serv. - - - - -	10	688
Urographis fasciatus DeG. - - - - -	9	326
Urostylis sp. - - - - -	3	145
Utetheisa ornatatrix L. - - - - -	1	38, 39
	2	77
	4	227
Utetheisa venusta Dalman - - - - -	7	195
Vanessa cardui L. See		
Cynthia cardui L.		
Vespa crabro L. - - - - -	4	224
	7	483
	3	559-560
	9	605, 632
Vinsonia stellifera Westw. - - - - -	1	38
Vitruvius insignis Dist. - - - - -	3	144
Xanthopastis timais Cram. - - - - -	5	311
Xerophloea viridis Fab. - - - - -	9	603
Xyletinus peltatus Harr. - - - - -	5	314
	6	405
	3	539
Zabrotes (Spermophagus) pectoralis Sharp -	10	633
Zeugophora sp. - - - - -	8	502
Zinckenia fascialis Cram. - - - - -	3	410
Zophodia grossulariae Riley - - - - -	5	279, 280
	5	350

We wish particularly to urge upon our collaborators the use of the common names accepted by the American Association of Economic Entomologists. These should be considered as official names by all American economic entomologists. These approved common names are indicated by the letters a. n. o. (americano nomina officinale). A list of all accepted names was published in the Journal of Economic Entomology for December, 1931, pages 1273-1310.

Alder flea beetle a.n.o. - - - - -	<i>Haltica bimarginata</i> Say
Alfalfa caterpillar a.n.o. - - - - -	<i>Eurymus eurytheme</i> Bdv.
Alfalfa thrips - - - - -	<i>Frankliniella occidentalis</i> Perg.
Alfalfa weevil a.n.o. - - - - -	<i>Hypera postica</i> Gyll.
Apple and thorn skeletonizer a.n.o. -	<i>Hemerophila pariana</i> Clerck
Apple aphid a.n.o. - - - - -	<i>Aphis pomi</i> DeG.
Apple curculio a.n.o. - - - - -	<i>Tachypterellus quadrigibbus</i> Say
Apple flea weevil a.n.o. - - - - -	<i>Orchestes pallicornis</i> Say
Apple grain aphid a.n.o. - - - - -	<i>Rhopalosiphum prunifoliae</i> Fitch
Apple leaf skeletonizer a.n.o. - - -	<i>Psorosina hammondi</i> Riley
Apple maggot a.n.o. - - - - -	<i>Rhagoletis pomonella</i> Walsh
Apple redbug a.n.o. - - - - -	<i>Lygidea mendax</i> Reut.
Apple twig borer a.n.o. - - - - -	<i>Amphicercus bicaudatus</i> Say
Argentine ant a.n.o. - - - - -	<i>Iridomyrmex humilis</i> Mayr
Argus tortoise beetle a.n.o. - - - -	<i>Chelymorpha cassidea</i> Fab.
Armyworm a.n.o. - - - - -	<i>Cirphis unipuncta</i> Haw.
Ash-gray blister beetle a.n.o. - - -	<i>Macrobasis unicolor</i> Kby.
Asiatic beetle a.n.o. - - - - -	<i>Anomala orientalis</i> Waterh.
Asiatic garden beetle - - - - -	<i>Autoserica castanea</i> Arrow
Asparagus miner a.n.o. - - - - -	<i>Agromyza simplex</i> Loew
Aster root aphid - - - - -	<i>Prociphilus erigeronensis</i> Thos.
Azalea lacebug - - - - -	<i>Stephanitis pyrioides</i> Scott
Bagworm a.n.o. - - - - -	<i>Thyridopteryx ephemeraeformis</i> Haw.
Banded ash borer - - - - -	<i>Neoclytus caprea</i> Say
Banded cucumber beetle a.n.o. - - - -	<i>Diabrotica balteata</i> Lec.
Bean leaf beetle a.n.o. - - - - -	<i>Cerotoma trifurcata</i> Forst.
Bean leaf roller a.n.o. - - - - -	<i>Goniurus proteus</i> L.
Bean thrips a.n.o. - - - - -	<i>Heliothrips fasciatus</i> Perg.
Bean weevil a.n.o. - - - - -	<i>Acanthoscelides obtectus</i> Say
Bedbug a.n.o. - - - - -	<i>Cimex lectularius</i> L.
Beech leaf skeletonizer - - - - -	<i>Psilocorsis faginella</i> Chamb.
Beech scale a.n.o. - - - - -	<i>Cryptococcus fagi</i> Baer.
Beet armyworm a.n.o. - - - - -	<i>Laphygma exigua</i> Hbn.
Beet leafhopper a.n.o. - - - - -	<i>Eutettix tenellus</i> Baker
Beet webworm a.n.o. - - - - -	<i>Loxostege sticticalis</i> L.
Birch case bearer - - - - -	<i>Coleophora salmani</i> Heinr.
Birch leaf miner - - - - -	<i>Femusa pumila</i> Klug
Birch leaf-mining sawfly - - - - -	<i>Phyllotoma nemorata</i> Fallen
Birch sawfly - - - - -	<i>Arge pectoralis</i> Leach
Birch skeletonizer a.n.o. - - - - -	<i>Bucculatrix canadensisella</i> Chamb.
Black cherry aphid a.n.o. - - - - -	<i>Myzus cerasi</i> Fab.
Black citrus aphid a.n.o. - - - - -	<del>Tetraneura</del> <i>Tetraneura aurantiae</i> Boyer
Black pecan aphid a.n.o. - - - - -	<i>Myzocallis fumipennellus</i> Fitch
Black pine leaf scale - - - - -	<i>Aspidiotus pini</i> Comst.
Black vine weevil a.n.o. - - - - -	<i>Brachyrhinus sulcatus</i> Fab.

Blueberry maggot a.n.o. - - - - -	Rhagoletis pomonella Walsh
Blueberry stem borer - - - - -	Oberea myops Hald.
Blue pine borer - - - - -	Callidium antennatum Newm.
Boxelder bug a.n.o. - - - - -	Leptocoris trivittatus Say
Boxelder leaf roller a.n.o. - - - - -	Gracilaria negundella Chamb.
Boxwood leaf miner a.n.o. - - - - -	Monarthropalpus buxi Labou.
Bristly rose slug a.n.o. - - - - -	Cladius isomerus Nort.
Bronze birch borer a.n.o. - - - - -	Agrilus anxius Gory
Brown dog tick a.n.o. - - - - -	Rhipicephalus sanguineus Latr.
Brown-tail moth a.n.o. - - - - -	Nygmia phaeorrhoea Don.
Buckeye butterfly - - - - -	Junonia coenia Hbn.
Bulb mite a.n.o. - - - - -	Rhizoglyphus hyacinthi Bdv.
Bumble flower beetle a.n.o. - - - - -	Euphoria inda L.
Cabbage aphid a.n.o. - - - - -	Brevicoryne brassicae L.
Cabbage looper a.n.o. - - - - -	Autographa brassicae Riley
Cabbage maggot a.n.o. - - - - -	Hylemyia brassicae Bouche
Cabbage webworm a.n.o. - - - - -	Hellula undalis Fab.
California red scale a.n.o. - - - - -	Chrysomphalus aurantii Mask.
California tent caterpillar a.n.o. - - - - -	Malacosoma californica Pack.
California tortoise shell - - - - -	Aglais californica Bdv.
Camellia scale - - - - -	Lepidosaphes camelliae Bdv.
Cardin's whitefly - - - - -	Aleurodicus (Metaleurodicus) cardini Back
Carpenter worm a.n.o. - - - - -	Prionoxystus robiniae Peck
Carpet beetle a.n.o. - - - - -	Anthrenus scrophulariae L.
Carrot beetle a.n.o. - - - - -	Ligyrus gibbosus DeG.
Carrot rust fly a.n.o. - - - - -	Psila rosae Fab.
Catalpa mealybug - - - - -	Pseudococcus comstocki Kuw.
Catalpa sphinx a.n.o. - - - - -	Ceratonia catalpae Bdv.
Cecropia moth a.n.o. - - - - -	Platysaria cecropia L.
Celery looper a.n.o. - - - - -	Autographa falcifera Kby.
Chaff scale a.n.o. - - - - -	Parlatoria pergandii Comst.
Changa a.n.o. - - - - -	Scapteriscus vicinus Scudd.
Cheese mite - - - - -	Tyroglyphus siro L.
Cherry case bearer - - - - -	Coleophora brunella Cler.
Cherry fruit fly a.n.o. - - - - -	Rhagoletis cingulata Loew
Chicken mite a.n.o. - - - - -	Dermanyssus gallinae L.
Chigger a.n.o. - - - - -	Trombicula irritans Riley
Chigoe a.n.o. - - - - -	Tunga penetrans L.
Chinch bug a.n.o. - - - - -	Blissus leucopterus Say
Chrysanthemum aphid a.n.o. - - - - -	Macrosiphoniella sanborni Gill.
Chrysanthemum gall midge a.n.o. - - - - -	Diarthronomyia hypogaea Loew
Chrysanthemum lacebug - - - - -	Corythucha marmorata Uhl.
Cigar case bearer a.n.o. - - - - -	Coleophora fletcherella Fern.
Cigarette beetle a.n.o. - - - - -	Lasioderma serricornis Fab.
Citrophilus mealybug a.n.o. - - - - -	Pseudococcus gahani Green
Citrus blackfly a.n.o. - - - - -	Aleurocanthus woglumi Ashby
Citrus rust mite a.n.o. - - - - -	Phyllocoptes oleivorus Ashm.
Citrus whitefly a.n.o. - - - - -	Dialeurodes citri Ashm.
Cleft-horned prionus - - - - -	Prionus fissicornis Hald.
Clover hay worm a.n.o. - - - - -	Hypsoglia costalis Fab.
Clover leaf weevil a.n.o. - - - - -	Hypera punctata Fab.
Clover mite a.n.o. - - - - -	Bryobia praetiosa Koch



Clover root borer a.n.o. - - - - -	Hylastinus obscurus Marsham
Clover root curculio a.n.o. - - - - -	Sitona hispidula Fab.
Clover seed chalcid a.n.o. - - - - -	Bruchophagus funebris How.
Clover seed midge a.n.o. - - - - -	Dasyneura leguminicola Lintn.
Codling moth a.n.o. - - - - -	Carpocapsa pomonella L.
Colorado potato beetle a.n.o. - - - - -	Leptinotarsa decemlineata Say
Common red spider - - - - -	Tetranychus telarius L.
Confused flour beetle a.n.o. - - - - -	Tribolium confusum Duv.
Corn ear worm a.n.o. - - - - -	Heliothis obsoleta Fab.
Corn flea beetle a.n.o. - - - - -	Chaetocnema pulicaria Melsh.
Corn lantern fly - - - - -	Peregrinus maidis Ashm.
Corn leaf aphid a.n.o. - - - - -	Aphis maidis Fitch
Corn root aphid a.n.o. - - - - -	Anuraphis maidi-radicis Forbes
Corn root webworm a.n.o. - - - - -	Crambus caliginosellus Clem.
Cotton flea hopper a.n.o. - - - - -	Psallus seriatus Reut.
Cotton leaf worm a.n.o. - - - - -	Alabama argillacea Hbn.
Cottony-cushion scale a.n.o. - - - - -	Icerya purchasi Mask.
Cottony maple scale a.n.o. - - - - -	Pulvinaria vitis L.
Cowpea aphid a.n.o. - - - - -	Aphis medicaginis Koch
Cowpea curculio a.n.o. - - - - -	Chalcodermus aeneus Boh.
Cranberry fruit worm a.n.o. - - - - -	Mineola vaccinii Riley
Crepe myrtle aphid a.n.o. - - - - -	Myzocallis kahawaluokalani Kirk.
Cross-striped cabbage worm a.n.o. - - - - -	Evergestis rimosalis Guen.
Currant aphid a.n.o. - - - - -	Myzus ribis L.
Currant borer a.n.o. - - - - -	Synanthedon tipuliformis L.
Currant fruit fly a.n.o. - - - - -	Epochra canadensis Loew
Currant stem girdler a.n.o. - - - - -	Janus integer Nort.
Cyclamen mite a.n.o. - - - - -	Tarsonemus pallidus Ems.
Cypress bark scale - - - - -	Ehrhornia cypressi Ehrh.
Dark cherry fruit moth - - - - -	Rhagoletis fausta O. S.
Deodar weevil a.n.o. - - - - -	Pissodes deodarae Hopk.
Diamond-back moth a.n.o. - - - - -	Plutella maculipennis Curt.
Douglas-fir caterpillar - - - - -	Euschausia argentata Pack.
Eastern tent caterpillar a.n.o. - - - - -	Malacosoma americana Fab.
Eggplant flea beetle a.n.o. - - - - -	Epitrix fuscula Crotch
Eggplant lacebug a.n.o. - - - - -	Gargaphia solani Heid.
Eggplant leaf miner a.n.o. - - - - -	Gnorimoschema glochinella Zell.
Eight-spotted forester a.n.o. - - - - -	Alypia octomaculata Fab.
Elegant pine weevil - - - - -	Scythropus elegans Couper
Elm borer a.n.o. - - - - -	Saperda tridentata Oliv.
Elm flea beetle - - - - -	Haltica ulmi Woods
Elm leaf beetle a.n.o. - - - - -	Galerucella xanthorelaena Schr.
Elm scurfy scale a.n.o. - - - - -	Chionaspis americana Johns.
Elm spanworm a.n.o. - - - - -	Ennomos subsignarius Hbn.
English grain aphid a.n.o. - - - - -	Macrosiphum granarium Kby.
Euonymus scale a.n.o. - - - - -	Chionaspis euonymi Comst.
European corn borer a.n.o. - - - - -	Pyrausta nubilalis Hbn.
European earwig a.n.o. - - - - -	Forficula auricularia L.
European elm scale a.n.o. - - - - -	Gossyparia spuria Mod.
European fruit lecanium a.n.o. - - - - -	Lecanium corni Bouche
European larch sawfly - - - - -	Lygaeonematus erichsoni Htg.
European pine shoot moth a.n.o. - - - - -	Rhyacionia buoliana Schiff.

European red mite a.n.o. - - - - -	Paratetranychus pilosus C. & F.
European willow beetle - - - - -	Plagioderia versicolora Laich.
Eye-spotted budmoth a.n.o. - - - - -	Spilonota ocellana Schiff.
Fall armyworm a.n.o. - - - - -	Laphygma frugiperda S. & A.
Fall canker worm a.n.o. - - - - -	Alsophila pometaria Harr.
False chinch bug a.n.o. - - - - -	Nysius ericae Schill.
Fern scale a.n.o. - - - - -	Hemichionaspis aspidistreae Sign.
Field cricket a.n.o. - - - - -	Gryllus assimilis Fab.
Fir bark beetle - - - - -	Scolytus ventralis Lec.
Fire ant a.n.o. - - - - -	Solenopsis geminata Fab.
Flannel moth - - - - -	Lagoa crispata Pack.
Flat-headed apple tree borer a.n.o. -	Chrysobothris femorata Oliv.
Florida flower thrips - - - - -	Frankliniella tritici bispinosus Morg.
Florida red scale a.n.o. - - - - -	Chrysomphalus aonidum L.
Flower thrips a.n.o. - - - - -	Frankliniella tritici Fitch
Forest tent caterpillar a.n.o. - - -	Malacosoma disstria Hbn.
Four-lined plant bug a.n.o. - - - - -	Poecilocapsus lineatus Fab.
Fruit tree leaf roller a.n.o. - - - - -	Cacoecia argyrospila Walk.
Fuller's rose beetle a.n.o. - - - - -	Asynonychus godmani Crotch
Garden flea hopper a.n.o. - - - - -	Halticus citri Ashm.
Garden webworm a.n.o. - - - - -	Loxostege similalis Guen.
Giant aphid - - - - -	Longistigma caryae Harr.
Giant hornet a.n.o. - - - - -	Vespa crabro L.
Gladiolus thrips - - - - -	Taeniothrips gladioli M. & S.
Gloomy scale a.n.o. - - - - -	Chrysomphalus tenebricosus Comst.
Glover's scale a.n.o. - - - - -	Lepidosaphes gloverii Pack.
Golden oak scale - - - - -	Asterolecanium variolosum Ratz.
Golden polistes - - - - -	Polistes aurifer Sauss.
Gooseberry fruit worm a.n.o. - - - - -	Zophodia grossulariae Riley
Granary weevil a.n.o. - - - - -	Sitophilus granaria L.
Grape berry moth a.n.o. - - - - -	Polychrosis viteana Clem.
Grape colaspis a.n.o. - - - - -	Colaspis brunnea Fab.
Grape flea beetle a.n.o. - - - - -	Haltica chalybea Ill.
Grape leaf folder a.n.o. - - - - -	Desmia funeralis Hbn.
Grape leafhopper a.n.o. - - - - -	Erythroneura comae Say
Grape leaf skeletonizer a.n.o. - - -	Harrisina americana Guer.
Grape vine aphid a.n.o. - - - - -	Aphis illinoisensis Shim.
Green citrus aphid - - - - -	Aphis spiraeicola Patch
Green clover worm a.n.o. - - - - -	Plathypena scabra Fab.
Greenhouse centipede - - - - -	Scutigrella immaculata Newm.
Greenhouse leaf tier a.n.o. - - - - -	Phlyctenia rubig. Guen.
Greenhouse thrips a.n.o. - - - - -	Heliothrips haemorrhoidalis Bouche
Greenhouse whitefly a.n.o. - - - - -	Trialeurodes vaporariorum Westw.
Green peach aphid a.n.o. - - - - -	Myzus persicae Sulz.
Green stink bug a.n.o. - - - - -	Acrosternum hilaris Say
Green-striped maple worm a.n.o. - - -	Anisota rubicunda Fab.
Gypsy moth a.n.o. - - - - -	Porthetria dispar L.
Hag moth a.n.o. - - - - -	Phobetrus pithecius S. & A.
Harlequin bug a.n.o. - - - - -	Murgantia histrionica Hahn
Hemlock bark borer - - - - -	Melanophila fulvoguttata Harr.
Hessian fly a.n.o. - - - - -	Phytophaga destructor Say
Hickory bark beetle a.n.o. - - - - -	Scolytus quadrispinosus Say



Hickory phylloxera	Phylloxera caryaecaulis Fitch
Hickory shoot curculio	Conotrachelus aratus Germ.
Hickory shuck worm a.n.o.	Laspeyresia caryana Fitch
Hickory tussock moth a.n.o.	Halisidota caryae Harr.
Honey ant	Prenolepis imparis Say
Hop flea beetle a.n.o.	Psylliodes punctulata Melsh.
Horned oak gall	Andricus cornigerus O. S.
Hornet moth	Alcathoe apiformis Clerck
Horn fly a.n.o.	Haematobia irritans L.
Horse botfly	Gastrophilus haemorrhoidalis L.
House centipede a.n.o.	Scutigera forceps Raf.
House cricket a.n.o.	Gryllus domesticus L.
House fly a.n.o.	Musca domestica L.
Human flea a.n.o.	Pulex irritans L.
Imperial moth a.n.o.	Eacles imperialis Drury
Imported cabbage worm a.n.o.	Ascia rapae L.
Indian-meal moth a.n.o.	Plodia interpunctella Hbn.
Iris borer a.n.o.	Macronoctua onusta Grote
Ivy scale	Aspidiotus hederæ Vallot
Japanese beetle a.n.o.	Popillia japonica Newm.
Jumping bullet gall	Neuroterus saltatorius Hy. Edw.
Juniper scale	Diaspis carueli Targ.
Juniper webworm	Dichomeris marginellus Fab.
Large carpenter ant	Camponotus herculeanus L.
Leaf crumpler a.n.o.	Mineola indiginella Zell.
Leaf-footed bug a.n.o.	Leptoglossus phyllopus L.
Lesser apple worm	Laspeyresia prunivora Walsh
Lesser bulb fly a.n.o.	Eumerus tuberculatus Rond.
Lesser canna leaf roller	Geshna cannalis Quaint.
Lesser clover leaf weevil a.n.o.	Hypera nigrirostris Fab.
Lesser corn stalk borer a.n.o.	Elasmopalpus lignosellus Zell.
Lesser eastern pine bark beetle	Pityogenes hopkinsi Sw.
Lesser peach borer a.n.o.	Aegeria pictipes G. & R.
Lima bean vine borer	Monoptilota pergratialis Hulst
Lime-tree looper a.n.o.	Erannis tiliaria Harr.
Linden wart gall	Cecidomyia verrucicola O. S.
Locust borer a.n.o.	Cyllene robiniae Forst.
Loganberry crown borer	Bembecia marginata Harr.
Lone star tick a.n.o.	Amblyomma americanum L.
Lubber grasshopper a.n.o.	Brachystola magna Gir.
Maple bladder gall	Phyllocoptes quadripes Shim.
Maple borer	Synanthedon acerni Clem.
Maple case-bearer	Paraclemensia acerifoliella Fitch
Maple leaf stem borer	Priophorus acericaulis MacG.
Maple nenticula	Nepticula sericopeza Zell.
Maple trumpet skeletonizer	Thiodia signatana Clem.
Meadow frog hopper	Philaenus spumarius Fall.
Mealy flata	Ormenis pruinosa Say
Melon aphid a.n.o.	Aphis gossypii Glov.
Merchant grain beetle	Oryzaephilus mercator Fauv.
Mexican bean beetle a.n.o.	Epilachna corrupta Muls.



Mexican fruit worm See

Orange maggot

Midrib walnut aphid - - - - -	Callipterus juglandis Frisch
Mint flea beetle - - - - -	Longitarsus menthapagus Gent.
Mormon cricket a.n.o. - - - - -	Anabrus simplex Hald.
Mottled tortoise beetle a.n.o. - - -	Chirida guttata Oliv.
Mourning-cloak butterfly a.n.o. - - -	Hamadryas antiopa L.
Mushroom mite - - - - -	Tyroglyphus lintneri Osborn
Nantucket pine shoot moth - - - - -	Rhyacionia frustrana Comst.
Narcissus bulb fly a.n.o. - - - - -	Merodon equestris Fab.
Northern mole cricket a.n.o. - - - -	Gryllotalpa hexadactyla Perty
Norway maple aphid a.n.o. - - - - -	Periphyllus lyropictus Kess.
Oak lacebug - - - - -	Corythucha arcuata Say
Oak scale - - - - -	Chionaspis quercus Comst.
Oak twig pruner - - - - -	Hypermallus villosus Fab.
Obscure scale a.n.o. - - - - -	Chrysomphalus obscurus Comst.
Ocellate maple gall - - - - -	Cecidomyia ocellaris O. S.
Oleander scale - - - - -	Aspidiotus hederae Vallot
Onion maggot a.n.o. - - - - -	Hylemyia antiqua Meig.
Onion thrips a.n.o. - - - - -	Thrips tabaci L.
Orange maggot a.n.o. - - - - -	Anastrepha ludens Loew
Orange-striped oak worm a.n.o. - - -	Anisota senatoria S. & A.
Orange thrips a.n.o. - - - - -	Scirtothrips citri Moulton
Oriental fruit moth a.n.o. - - - - -	Grapholitha molesta Busck
Oriental moth a.n.o. - - - - -	Cnidocampa flavescens Walk.
Oyster-shell scale a.n.o. - - - - -	Lepidosaphes ulmi L.
Pacific red spider - - - - -	Tetranychus pacificus McG.
Painted lady - - - - -	Cynthia cardui L.
Pales weevil - - - - -	Hylobius pales Boh.
Parlatoria date scale a.n.o. - - - -	Parlatoria blanchardi Targ.
Parsley worm a.n.o. - - - - -	Papilio polyxenes Fab.
Pea aphid a.n.o. - - - - -	Illinoia pisi Kalt.
Peach borer a.n.o. - - - - -	Aegeria exitiosa Say
Peach twig borer a.n.o. - - - - -	Anarsia lineatella Zell.
Pear leaf blister mite a.n.o. - - - -	Eriophyes pyri Pgst.
Pear ridge a.n.o. - - - - -	Contarinia pyrivora Riley
Pear psylla a.n.o. - - - - -	Psyllia pyricola Foerst.
Pear slug a.n.o. - - - - -	Eriocarpoides limacina Retz.
Pear thrips a.n.o. - - - - -	Taeniothrips inconsequens Uzel
Pea weevil a.n.o. - - - - -	Bruchus pisorum L.
Pecan budmoth a.n.o. - - - - -	Gratchena bolliana Sling.
Pecan case bearer a.n.o. - - - - -	Acrobasis juglandis LeB.
Pecan cigar case bearer - - - - -	Colaphora caryaefoliella Clem.
Pecan cossid - - - - -	Cossula magnifica Streck.
Pecan leaf case bearer - - - - -	Acrobasis palliolella Rag.
Pecan nut case bearer a.n.o. - - - -	Acrobasis caryae Grote
Pecan spittle bug - - - - -	Clastoptera obtusa Say
Pecan weevil a.n.o. - - - - -	Curculio caryae Horn
Pepper and salt moth a.n.o. - - - - -	Amphidasis cognataria Guen.
Pepper weevil a.n.o. - - - - -	Anthonomus eugenii Cano

Periodical cicada a.n.o. - - - - -	(Tibicina) Magicicada septendecim L.
Persimmon psylla a.n.o. - - - - -	Trioza diospyri Ashm.
Pharoah's ant a.n.o. - - - - -	Monomorium pharaonis L.
Pickle worm a.n.o. - - - - -	Diaphania nitidalis Stoll
Pigeon tremex a.n.o. - - - - -	Tremex columba L.
Pine cone beetle - - - - -	Conophthorus coniperda Schwarz
Pine devil moth - - - - -	Citheronia sepulchralis G. & R.
Pine needle aphid - - - - -	Chermes pinifoliae Fitch
Pine needle miner - - - - -	Paralechia pinifoliella Chamb.
Pine needle scale a.n.o. - - - - -	Chionaspis pinifoliae Fitch
Pine tube moth - - - - -	Eulia pinatubana Kearf.
Pine webworm - - - - -	Tetralopha melanogrammos Zell.
Pink boll worm a.n.o. - - - - -	Pectinophora gossypiella Saund.
Pistol case bearer a.n.o. - - - - -	Coleophora malivorella Riley
Pitch twig moth a.n.o. - - - - -	Petrova comstockiana Fernald
Plains false wireworm a.n.o. - - - - -	Eleodes opaca Say
Plum curculio a.n.o. - - - - -	Conotrachelus nenuphar Hbst.
Plum gouger a.n.o. - - - - -	Anthonomus scutellaris Lec.
Poplar borer a.n.o. - - - - -	Saperda calcarata Say
Poplar leaf roller - - - - -	Caecoecia conflictana Walk.
Poplar sawfly - - - - -	Trichiocampus viminalis Fall.
Poplar tent maker - - - - -	Ichthyura inclusa Hbn.
Potato aphid a.n.o. - - - - -	Illinoia solanifolii Ashm.
Potato leafhopper a.n.o. - - - - -	Empoasca fabae Harr.
Potato stalk borer a.n.o. - - - - -	Trichobaris trinotata Say
Potato tuber worm a.n.o. - - - - -	Gnorimoschema operculella Zell.
Prickly ash beetle - - - - -	Trirhabda brevicollis Lec.
Punkie - - - - -	Culicoides canithorax Hoffm.
Purple mite - - - - -	Paratetranychus citri McG.
Purple scale a.n.o. - - - - -	Lepidosaphes beekii Newm.
Puss caterpillar - - - - -	Megalopyge opercularis S. & A.
Quince curculio a.n.o. - - - - -	Conotrachelus crataegi Walsh
Raspberry bud mite - - - - -	Eriophyes gracilis Nal.
Raspberry cane borer a.n.o. - - - - -	Oberea bimaculata Oliv.
Raspberry cane maggot a.n.o. - - - - -	Hylemyia rubivora Coq.
Raspberry root borer a.n.o. - - - - -	Bembecia marginata Harr.
Red banded thrips - - - - -	Selenothrips rubrocinctus Giard
Red-headed pine sawfly a.n.o. - - - - -	Neodiprion lecontei Fitch
Red-humped caterpillar a.n.o. - - - - -	Schizura concinna S. & A.
Red oak borer - - - - -	Romaleum rufulum Hald.
Red-necked cane borer a.n.o. - - - - -	Agrilus ruficollis Fab.
Rice water weevil a.n.o. - - - - -	Lissorhoptrus simplex Say
Rice weevil a.n.o. - - - - -	Sitophilus oryzae L.
Rose aphid a.n.o. - - - - -	Macrosiphum rosae L.
Rose chafer a.n.o. - - - - -	Macroductylus subspinosus Fab.
Rose leaf beetle - - - - -	Nodonota puncticollis Say
Rose leafhopper a.n.o. - - - - -	Typhlocyba rosae L.
Rose sawfly a.n.o. - - - - -	Caliroa aethiops Fab.
Rosy apple aphid a.n.o. - - - - -	Anuraphis roseus Baker
Round-headed apple tree borer a.n.o. - - - - -	Saperda candida Fab.
Rust-red flour beetle a.n.o. - - - - -	Tribolium ferrugineum Fab.
Rusty plum aphid a.n.o. - - - - -	Hysteroneura setariae Thos.



Saddled prominent a.n.o. - - - - -	<i>Heterocampa guttivitta</i> Walk.
Salt-marsh caterpillar a.n.o. - - - - -	<i>Estigmene acrea</i> Drury
Salt-marsh mosquito a.n.o. - - - - -	<i>Aedes sollicitans</i> Walk.
Sand wireworm a.n.o. - - - - -	<i>Horistonotus uhleri</i> Horn
San Jose scale a.n.o. - - - - -	<i>Aspidiotus perniciosus</i> Comst.
Satin moth a.n.o. - - - - -	<i>Stilpnotia salicis</i> L.
Saw-toothed grain beetle a.n.o. - - - - -	<i>Oryzaephilus surinamensis</i> L.
Say's blister beetle a.n.o. - - - - -	<i>Pomphopoea sayi</i> Lec.
Say's plant bug - - - - -	<i>Chlorochroa sayi</i> Stal
Scotch pine lecanium - - - - -	<i>Toumeyella numismaticum</i> P. & McD.
Screw worm a.n.o. - - - - -	<i>Cochliomyia macellaria</i> Fab.
Seed corn beetle - - - - -	<i>Agonoderus pallipes</i> Fab.
Seed corn maggot a.n.o. - - - - -	<i>Hylemyia cilicrura</i> Rond.
Sheep scab mite a.n.o. - - - - -	<i>Psorontes ovis</i> Her.
Sheep tick a.n.o. - - - - -	<i>Melophagus ovinus</i> L.
Short-nosed ox louse a.n.o. - - - - -	<i>Haematopinus eurysternus</i> Nitz.
Shot-hole borer a.n.o. - - - - -	<i>Scolytus rugulosus</i> Ratz.
Silverfish a.n.o. - - - - -	<i>Lepisma saccharina</i> L.
Sitka-spruce gall aphid - - - - -	<i>Gillettea cooleyi</i> Gill.
Six-spotted grape beetle - - - - -	<i>Pelidnota punctata</i> L.
Six-spotted mite - - - - -	<i>Tetranychus sexmaculatus</i> Riley
Smaller bamboo shot-hole borer - - - - -	<i>Dinoderus minutus</i> Fab.
Snowball aphid a.n.o. - - - - -	<i>Aphis viburnicola</i> Gill.
Snowy tree cricket a.n.o. - - - - -	<i>Oecanthus niveus</i> DeG.
Soft scale a.n.o. - - - - -	<i>Coccus hesperidum</i> L.
Sorghum midge a.n.o. - - - - -	<i>Contarinia sorghicola</i> Coq.
Sorghum webworm a.n.o. - - - - -	<i>Celama sorghiella</i> Riley
Southern cabbage worm a.n.o. - - - - -	<i>Ascia protodice</i> E. & L.
Southern corn leaf beetle - - - - -	<i>Myochrous denticollis</i> Lec.
Southern corn stalk borer - - - - -	<i>Diatraea crambidoides</i> Grote
Southern green stink bug a.n.o. - - - - -	<i>Nezara viridula</i> L.
Southern pine beetle a.n.o. - - - - -	<i>Dendroctonus frontalis</i> Zimm.
Southern pine weevil - - - - -	<i>Pissodes nemorensis</i> Germ.
Spinach leaf miner a.n.o. - - - - -	<i>Pegomya hyoscyami</i> Panz.
Spiny witchhazel gall - - - - -	<i>Hamamelistes spinosus</i> Shim.
Spotted camel cricket - - - - -	<i>Ceuthophilus maculatus</i> Harr.
Spotted cucumber beetle a.n.o. - - - - -	<i>Diabrotica duodecimpunctata</i> Fab.
Spotted garden slug - - - - -	<i>Limax maximus</i> L.
Spotted pelidnota - - - - -	<i>Pelidnota punctata</i> L.
Spotted willow leaf beetle - - - - -	<i>Lina interrupta</i> Fab.
Spring canker worm a.n.o. - - - - -	<i>Paleacrita vernata</i> Peck
Spruce bud scale - - - - -	<i>Physokermes piceae</i> Schr.
Spruce budworm a. n. o. - - - - -	<i>Harmoloba fraxiferana</i> Clem.
Spruce cone worm - - - - -	<i>Dioryctria reniculella</i> Grote
Spruce gall aphid - - - - -	<i>Chermes abietis</i> L.
Spruce mite - - - - -	<i>Paratetranychus uniunguis</i> Jacobi
Spruce needle miner - - - - -	<i>Epinotia nanana</i> Treit.
Squash beetle a.n.o. - - - - -	<i>Epilachna borealis</i> Fab.
Squash borer a.n.o. - - - - -	<i>Melittia satyriniformis</i> Hbn.
Squash bug a.n.o. - - - - -	<i>Anasa tristis</i> DeG.
Stable fly a.n.o. - - - - -	<i>Stomoxys calcitrans</i> L.
Stalk borer a.n.o. - - - - -	<i>Papaipema nebris nitela</i> Guen.



Sticktight flea a.n.o. - - - - -	<i>Echidnophaga gallinacea</i> Westw.
Strawberry crown borer a.n.o. - - - - -	<i>Tyloderma fragariae</i> Riley
Strawberry crown moth a.n.o. - - - - -	<i>Aegeria rutilans</i> Hy. Edw.
Strawberry leaf roller a.n.o. - - - - -	<i>Ancylis comptana</i> Froel.
Strawberry pamera - - - - -	<i>Orthaea vineta</i> Say
Strawberry root aphid a.n.o. - - - - -	<i>Aphis forbesi</i> Weed
Strawberry root weevil - - - - -	<i>Brachyrhinus ovatus</i> L.
Strawberry root worm - - - - -	<i>Paria canella</i> Fab.
Strawberry weevil - - - - -	<i>Anthonomus signatus</i> Say
Striped cucumber beetle a.n.o. - - - - -	<i>Diabrotica vittata</i> Fab.
Striped flea beetle a.n.o. - - - - -	<i>Phyllotreta vittata</i> Fab.
Suckfly a.n.o. - - - - -	<i>Dicyphus minimus</i> Uhler
Sugar beet root maggot - - - - -	<i>Tetanops aldrichi</i> Hendel
Sugarcane beetle a.n.o. - - - - -	<i>Euethola rugiceps</i> Lec.
Sugarcane borer a.n.o. - - - - -	<i>Diatraea saccharalis</i> Fab.
Sugarcane mealybug - - - - -	<i>Pseudococcus boninsis</i> Kuwana
Sugar-maple borer a.n.o. - - - - -	<i>Glycobius speciosus</i> Say
Sumac flea beetle - - - - -	<i>Blepharida rhois</i> Forst.
Sunflower weevil - - - - -	<i>Rhodoaenus 13-punctatus</i> Ill.
Sweetpotato flea beetle a.n.o. - - - - -	<i>Chaetocnema confinis</i> Crotch
Sweetpotato sawfly - - - - -	<i>Sterictiphora collaris</i> Say
Sycamore lacebug - - - - -	<i>Corythucha ciliata</i> Say
Sycamore leaf miner - - - - -	<i>Phyllonorycter felinella</i> Heinr.
Tamarisk scale - - - - -	<i>Chionaspis etrusca</i> Leon.
Tarnished plant bug a.n.o. - - - - -	<i>Lygus pratensis</i> L.
Terrapin scale a.n.o. - - - - -	<i>Lecanium nigrofasciatum</i> Perg.
Thistle aphid a.n.o. - - - - -	<i>Anuraphis cardui</i> L.
Three-cornered alfalfa hopper - - - - -	<i>Stictocephala festina</i> Say
Three-lined potato beetle a.n.o. - - - - -	<i>Lema trilineata</i> Oliv.
Thurberia weevil a.n.o. - - - - -	<i>Anthonomus grandis thurberiae</i> Pierce
Tobacco budworm a.n.o. - - - - -	<i>Heliothis virescens</i> Fab.
Tobacco flea beetle a.n.o. - - - - -	<i>Epitrix parvula</i> Fab.
Tobacco thrips - - - - -	<i>Frankliniella fusca</i> Hinds
Tomato pin worm - - - - -	<i>Gnorimoschema lycopersicella</i> Busck
Tomato psyllid - - - - -	<i>Paratrioza cockerelli</i> Sulz.
Tomato stilt bug - - - - -	<i>Jalysus spinosus</i> Say
Tomato worm - - - - -	<i>Phlegethontius sexta</i> Johan.
Tulip aphid - - - - -	<i>Anuraphis tulipae</i> Boyer
Tulip tree scale - - - - -	<i>Toumeyella liriiodendri</i> Gmel.
Turnip aphid a.n.o. - - - - -	<i>Rhopalosiphum pseudobrassicae</i> Davis
Turnip root aphid - - - - -	<i>Pemphigus populitransversus</i> Riley
Twig girdler a.n.o. - - - - -	<i>Oncideres cingulatus</i> Say
Two-lined chestnut borer a.n.o. - - - - -	<i>Agrilus bilineatus</i> Web.
Two-marked treehopper - - - - -	<i>Enchenopa binotata</i> Say
Two-spotted mite - - - - -	<i>Tetranychus bimaculatus</i> Harvey
Variegated fritillary - - - - -	<i>Euptoieta claudia</i> Cram.
Vedalia a.n.o. - - - - -	<i>Rodolia cardinalis</i> Muls.
Vegetable weevil a.n.o. - - - - -	<i>Listroderes obliquus</i> Gyll.
Velvet bean caterpillar a.n.o. - - - - -	<i>Anticarsia gemmatilis</i> Hbn.
Walnut caterpillar a.n.o. - - - - -	<i>Datana integerrima</i> G. & R.

Western rose-chaffer - - - - -	Macroductylus uniformis Horn
Western spotted cucumber beetle a.n.o. - - - - -	Diabrotica soror Lec.
Western sycamore lacebug - - - - -	Corythucha confraterna Gibson
Wheat head armyworm a.n.o. - - - - -	Neleucania albilinea Hbn.
Wheat joint worm a.n.o. - - - - -	Harrolita tritici Fitch
Wheat stem maggot a.n.o. - - - - -	Meromyza americana Fitch
Wheat stem sawfly a.n.o. - - - - -	Cephus cinctus Nort.
Wheat straw worm a.n.o. - - - - -	Harmolita grandis Riley
White-lined sphinx a.n.o. - - - - -	Sphinx lineata Fab.
White-marked spider beetle a.n.o. - - - - -	Ptinus fur L.
White-marked tussock moth a.n.o. - - - - -	Hemerocampa leucostigma S. & A.
White peach scale a.n.o. - - - - -	Aulacaspis pentagona Targ.
White-pine weevil a.n.o. - - - - -	Pissodes strobi Peck
Willow borer - - - - -	Cryptorhynchus lapathi L.
Woolly apple aphid a.n.o. - - - - -	Eriosoma lanigerum Hausm.
Woolly beech aphid - - - - -	Prociphilus imbricator Fitch
Woolly larch aphid - - - - -	Adelges strobilobius Kalt.
Woolly maple leaf scale - - - - -	Phenacoccus acericola King
Yellow meal worm a.n.o. - - - - -	Tenebrio molitor L.
Yellow-necked caterpillar a.n.o. - - - - -	Datana ministra Drury
Zebra caterpillar a.n.o. - - - - -	Mamestra picta Harr.



















